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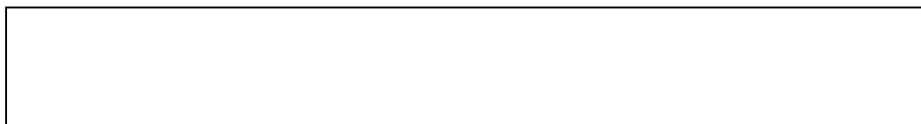
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SOVIET DEFENSE EXPENDITURES



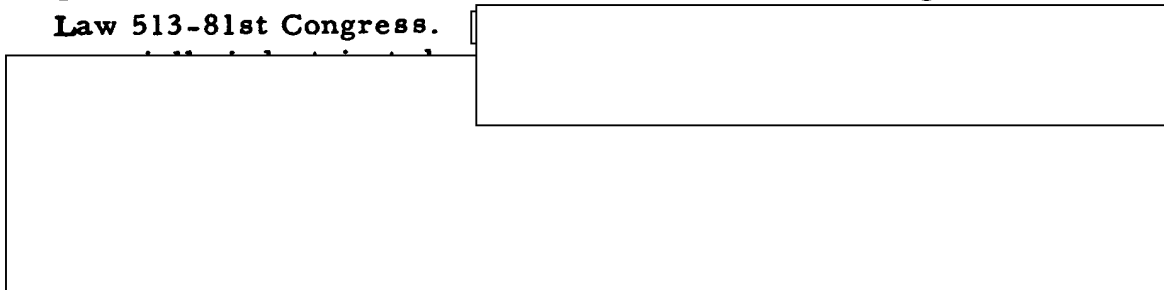
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FOREWORD

This report is based on a thorough exploitation of all pertinent intelligence sources. Its purpose is to develop an official series of Soviet outlays on military end items as well as a real series of total defense expenditures. Material presented in CIA/RR 36, The Soviet Potential for the Production of Munitions, 18 Aug 54, TOP SECRET, and in CIA/SC/RR 80, The 1954 Soviet Budget, 29 Sep 54, TOP SECRET is reconsidered and brought up to date.

Defense expenditures, particularly for military equipment, are sensitive indicators of a nation's power position among nations as well as indicators of the priority which defense has been given in relation to other economic activities. The USSR, in spite of its rapid industrial growth, can produce little more than one-third of the military end items which the US can produce. Its annual outlays for defense and military equipment must, therefore, be expected to absorb a relatively large portion of total economic effort, and its military inventories must be maintained at high levels to assure its position as a major power. This report should contribute to an understanding of these two aspects of Soviet economic effort for defense in recent years.

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CONTENTS

	<u>Page</u>
Summary and Conclusions	1
I. Introduction	3
II. Categories of Defense Expenditures	10
A. Army, Air Force, and Navy	10
1. Personnel	11
2. Maintenance and Operations	15
3. Construction	17
4. Research and Development	20
5. Military End Items	21
B. Militarized Security Troops	25
III. Defense-Related Activities	27
A. Reserve Components	27
B. Civil Air Fleet	27
C. Industrial Mobilization	28
D. Foreign Trade in Military End Items	28
IV. Magnitude of Defense Expenditures	29
A. Military Personnel	30
B. Maintenance and Operations and Military Construction	32
C. Military End Items	37
V. Comparative Measures of Soviet Defense Expenditures	43

~~TOP SECRET~~

~~TOP SECRET~~



	<u>Page</u>
A. US and Soviet Armament Expenditures	43
B. Soviet Defense Expenditures and National Product	48

Appendixes

Appendix A. Organization of the Soviet Ministry of Defense	51
Appendix B. Alternative Index for Military Personnel Costs	67
Appendix C. Soviet Defense Expenditures as a Category of the State Budget	73
Appendix D. Gaps in Intelligence	89
Appendix E. Source References	91

Tables

1. Categories for Soviet Hidden Defense Expenditures (Plan Figures), Selected Years, 1941-55	8
2. Size of the Soviet Armed Forces, 1940 and 1944-55	30
3. Average Rate of Pay of the Soviet Armed Forces, 1940 and 1944-55	31
4. Food and Clothing Costs per Capita of the Soviet Armed Forces, 1940 and 1944-55	33

~~TOP SECRET~~



~~TOP SECRET~~

	<u>Page</u>
5. Personnel Costs of the Soviet Armed Forces, 1940 and 1944-55	34
6. Expenditures for Maintenance and Operations and for Total Defense in the US, Fiscal Years, 1951-55	36
7. Soviet Defense Expenditures, Including Expenditures for Militarized Security Troops, 1940 and 1944-55	38
8. Major Components of Soviet Defense Expenditures, 1940 and 1944-55	39
9. Selected Soviet Price Indexes, 1940 and 1945-55	40
10. Estimated Soviet Armament Price Index, 1940 and 1944-55	42
11. Soviet Expenditures for Military End Items, 1940 and 1944-55	44
12. Ruble and Dollar Prices for Selected Items of Soviet Military Equipment	46
13. Dollar Value of Soviet Military End Items, 1940 and 1944-55	47
14. US and Soviet Expenditures for Military End Items, 1946-55	49
15. Indexes in Constant Prices of Soviet Defense Expenditures, 1948-55	50
16. Comparison of Estimates of Personnel Costs of the Soviet Armed Forces, 1950-54	67

~~TOP SECRET~~

~~TOP SECRET~~

	<u>Page</u>
17. Personnel Costs of the Soviet Armed Forces in Selected Areas as a Share of Strategic Expenditures	70
18. Strategic Expenditures for Selected Areas of the Soviet Far East, 1950-54	71
19. Categories for Soviet Hidden Defense Expenditures (Plan Figures), Selected Years, 1937-55	76
20. Soviet State Budgets, Selected Years, 1937-55	80

Charts

	<u>Following Page</u>
Figure 1. Organization of the Soviet Ministry of Defense, 1954	52
Figure 2. Functional Classification of the Over-All Organization of the Soviet Ministry of Defense, 1955	56

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CIA/SC/RR 122

(ORR Project 10407) []

SOVIET DEFENSE EXPENDITURES*

Summary and Conclusions

Analysis of the Soviet state budget, [] has located the major classes of appropriations for defense and defense-related activities in the USSR and has left only an outside chance that any other sizable appropriations for such purposes still remain to be identified. The large explicit appropriation for defense in the budget is the logical source of funds for financing the military establishment. This inference is supported by the range of expenditures by the Soviet military establishment, [] The classes of expenditures observed include outlays for the pay and subsistence of personnel; the maintenance and operation of military installations, equipment, and units; construction for exclusively or primarily military use, as of barracks, military airfields, and port and harbor facilities; and the procurement of a wide variety of military end items, possibly including guided missiles. In addition, these expenditures include some small outlays on research and development related to new weapons (financed mainly through the budget allocation for Social-Cultural Measures). This evidence on the expenditures of the military establishment further reduces, though it does not eliminate, the possibility that expenditures for such purposes are financed otherwise than through the explicit defense appropriation.

To determine the extent to which the expenditures of the military establishment -- and the explicit defense appropriation -- cover the cost of defense to the Soviet economy is an inherently difficult problem,

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 August 1955.

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particularly for military end items, even when it is limited to the problem of relative cost and price relationships between military end items and producer goods. The production of military end items has been especially favored by elements of subsidy and high priorities for productive services. The budgetary subsidies granted to all Soviet industry (including the defense industries) during World War II were abolished in 1949 and 1950. Since then, however, subsidization seems to have continued during the developmental phase of new products, in part perhaps from funds for research and development, and during the initial operations of a new production facility. This policy, which provides grants for initial development, favors the armament industries, where the rate of technological change is relatively rapid. These industries also benefit from apparent high priorities for new capital equipment and other productive services. Thus defense goods in the Soviet hierarchy of cost and price relationships are favored relative to capital goods. Indeed, the value of a ruble spent for military equipment is worth considerably more (measured in dollars) than the ruble spent for capital equipment. This high relative value is accounted for in US-Soviet comparisons by the use of appropriate ruble-dollar ratios.

The sum of the explicit defense appropriation -- the appropriation to the Ministry of Defense -- plus one-third of the appropriation to Internal Security -- which accounts for the militarized units of the security troops -- has ranged during the Fifth Five Year Plan from a low of 101 billion rubles in 1951 to a high of 119 billion rubles in 1955. These appropriations cover three broad classes of expenditures: (1) personnel; (2) maintenance and operations, and construction; and (3) major procurement. In recent years the first category is estimated to have remained fairly stable, representing slightly less than one-third of the total in 1951 and slightly more than one-quarter in 1955. The second category is judged to have fluctuated with total defense expenditures at about one-quarter of the total defense outlays, including the estimate for militarized security troops. The remainder -- varying up to about one-half of the total -- is for military end items.

In constant prices, Soviet outlays on military end items are at a postwar high in 1955, though they are only slightly greater than in 1952. This level of expenditure is roughly four times the postwar

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low reached in 1947, but only about one-half the high level reached in World War II. In current prices, total defense outlays in 1952 were more than 60 percent above, and in 1955, 70 percent above, the 1948 level.

Soviet expenditures for military end items appear to have been slightly higher than those of the US (when compared in like monetary units) for the immediate postwar period to about 1951. Since then, even though they have increased, they have fallen well below those of the US. For the entire period (1946-55), US expenditures for military equipment have exceeded those of the USSR by from 10 to 50 percent.*

I. Introduction.

At least three distinct purposes are served by a study of Soviet defense expenditures over time. First, such information, in conjunction with an index of price changes, provides a basis for judging changes in the magnitude of the defense effort of the USSR. The current defense effort can be compared with the World War II effort and with that of the early postwar years. For this kind of estimate it is not necessary either to have complete coverage of all expenditures or to have prices reflect costs accurately. It is sufficient to have consistent under- or overreporting of total expenditures and a consistent distortion between prices and costs.

Second, Soviet military expenditures may be related to national product to give the proportion of total economic resources devoted to military purposes. This sort of estimate requires comprehensive coverage of all expenditures for defense purposes, whether explicitly stated or hidden in other categories. Also, the prices of military goods and services must fully reflect all real costs.

* Although these comparisons are in like monetary units, they do not necessarily reflect the combat effectiveness of the military end items involved.

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Third, Soviet military expenditures may be compared with the defense efforts of other countries, either in terms of relative size of defense effort as compared with total economic activity or in terms of a direct comparison of magnitudes. A comparison of the relative sizes of defense efforts in two countries requires the same information needed for the second purpose. A direct comparison of magnitudes requires not only the same degree of precision but also a firm notion as to the military equivalence of a ruble's worth of Soviet resources as compared with, for instance, a dollar's worth of US resources -- in effect, a military usefulness exchange rate. Of course, these ideal measures can only be approximated.

Before turning to the examination of Soviet defense expenditures, a brief statement may be made of the kinds of activities that in principle ought to be included as part of a nation's current military effort. These activities include: (1) services of personnel in the military forces, measured in principle by the annual wages that they would receive in alternative employments, but in practice by the military pay and allowances received; (2) direct outlays on goods used by the military establishments, both common-use items for personnel needs and military end items such as weapons and trucks; (3) maintenance and operation of the physical military establishment, such as the consumption of electric power and building repairs; (4) operational activities of military units, such as equipment maintenance and fuel consumption; (5) military construction -- such projects as barracks, airports, and supply depots; (6) research and development costs for new weapons; (7) services of organized reserves, militarized internal security units, and civil defense; (8) investment in industries producing defense goods; (9) construction with joint civilian and military end use, such as highways and commercial airports; (10) investment and operational costs for nuclear weapons not included elsewhere; and (11) foreign military aid.

Defense budgets in most countries do not cover all of the categories listed above, and the Soviet budget is no exception. In order to present the principles underlying the defense budget classifications in this report, a preliminary examination of Soviet budgetary practices

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is in order.* It appears that the explicit defense allocation in the Soviet budget covers all of the categories (1) through (5) listed above and possibly some parts of category (6), research and development. In the latter category, there are joint-cost allocation problems. Research and development activities are to some degree an investment in industrial progress rather than in military technology alone, and the line between the two cannot be precisely drawn. Similarly, under category (7) the allocation to militarized security troops (which is not included in the explicit Soviet defense appropriation) serves both a law-enforcement function and a military function insofar as these units are equipped and trained as reserve operational groups. Similar problems are encountered in the US defense budget, at least insofar as research and development activities are concerned.

Categories (8) and (9) usually are not included in the defense budgets of any country. The joint military-civilian use problem is again present here, since investment in munitions plants ordinarily increases both munitions capacity and industrial capacity in general,** and highways and airports obviously may serve both kinds of uses concurrently or alternatively. Moreover, it is evident that a country which has a larger investment program in defense industries than a second country which supports a comparable defense effort in all other respects is in a real sense making the larger defense effort. This difference in investment policy ought to show up in a greater future output in defense goods, and thus it ultimately is taken into account. For this reason, categories (8) and (9) are excluded from defense expenditures as defined in this report.***

* One of the purposes of this report is to make comparisons between the US and the USSR for different years. In either case, comparability is more important than comprehensiveness.

** It is obvious that increased capacity to produce particular munitions can be converted into increased capacity to produce a wide variety of products (and vice versa).

*** It should be noted that the problem of whether investment expenditures for either replacement of or additions to munitions plants should be considered as a part of defense expenditures is completely separate from the problem of whether munitions prices are set high enough to reflect depreciation and obsolescence on the capital assets

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No conceptual problems are encountered in the treatment of category (10), nuclear weapons. Expenditures for this category are clearly for defense purposes, with the possible exception of capital expenditures for facilities with industrial usage. The USSR does not reveal information on the magnitude of its nuclear energy expenditures. Hence nuclear energy expenditures are not included in defense expenditures in this report. They are properly included in the broader category of outlays for national security, which include category (11), foreign military aid, as well.

The coverage of Soviet defense expenditures, for purposes of this report, thus includes categories (1) through (5) and an estimated portion of categories (6) and (7). Expenditures for these categories may be found in several places. The explicit defense budget apparently contains all of activity categories (1) through (5) and possibly some parts of category (6), research and development. Parts of categories (6) and (7) and presumably all of categories (10) and (11) are located in other parts of the budget. Research and development probably are in the Soviet budget in Social-Cultural Measures under the heading Science. The budget category Internal Security includes funds for those militarized security troops that may be considered military personnel. Part of this category is added in this report to the explicit defense appropriation. There is no positive evidence that any other budget category includes defense expenditures as defined. Nuclear energy allocations are believed to have been in various residual categories in the past. The present location of these allocations is a matter of speculation. For example, until the end of 1950 these

used in their production. The investment problem is concerned with whether resources used to replace or to add to the stock of capital in munitions industry should be counted as part of the current military or defense effort. The price problem is concerned with whether the current costs of producing munitions are adequately accounted for and whether the munitions industry has sufficient internal funds to replace or to add to its capital equipment. It clearly makes no difference to the investment problem whether the funds to finance the project come from the general budget or from the internal funds of enterprises.

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allocations were in the undisclosed residual of the general budget. Beginning in 1951 they were transferred to the residual within Financing the National Economy. In 1955, nuclear energy operating expenditures may have been transferred into the Heavy Industry category, under Financing the National Economy -- possibly under the Ministry of Medium Machine Building. It is probable that the cost of research and development involving nuclear weapons has been borne by those budget categories in which nuclear energy allocations have been observed.

The amount of defense expenditures which may be hidden in the Soviet state budget -- that is, expenditures for defense in addition to those noted above -- has been a cause of concern for many budget analysts. The estimates for them vary from amounts which are negligible to amounts approaching one-third of explicit appropriations. There is agreement, however, that the sources of any such hidden categories are the undisclosed residuals in the budget.* These residuals are usually expenditures that actually are made but are made for an unspecified purpose. On occasion, particularly during the last 3 years, one of these expenditure categories has been artificially inflated by the inclusion of fictitious items, apparently with the intention of making the services of the government to the population appear to be larger than they really are.

Examination of past Soviet state budgets shows the magnitude of residuals for the entire budget and for the category Financing the National Economy. In addition, it establishes the principles of Soviet budget planning. Table 1** shows the residual categories for selected

* An undisclosed residual is simply the difference between a given total for the category and the sum of the announced components. There are undisclosed residuals for every category and subcategory for which totals are given -- for example, one for the budget as a whole and one for the category Financing the National Economy. An undisclosed residual may indicate either an attempt to conceal or simply a disinclination to list a large number of individually unimportant categories.

** Table 1 follows on p. 8.

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years from 1941 to 1955. Fictitious entries have been excluded. The figures designated as undisclosed are the amounts which remain unexplained after some initially unannounced categories have been taken into account. It is clear that the undisclosed portion of the general budget residual is not surprisingly large, in view of the necessity for such a category to account for miscellaneous outlays. The one exceptional year is 1950, when nuclear energy outlays may have become substantial. The planned residual within Financing the National Economy is almost accounted for in 1941 by outlays for state reserves, the Ministry of Automobile Transport, the Chief Directorate of Precious Metals in the Ministry of Finance, and other known organizations.

Table 1
Categories for Soviet Hidden Defense Expenditures a/
(Plan Figures)
Selected Years, 1941-55

	Billion Current Rubles						
	1941	1944	1948	1950	1952	1954	1955
Budget residual <u>b/</u>	16.7	18.3	43.1	49.5	43.5	45.3 <u>c/</u>	47.0 <u>d/</u>
Internal Security	7.3	(6.8) <u>e/</u>	(25.2) <u>e/</u>	21.1	22.9	N.A.	N.A.
Known uses	8.6	9.9	11.3	14.6	16.4	N.A.	N.A.
Undisclosed	0.8	1.6	6.6	13.8	4.2	N.A.	N.A.
Residual within Financing the National Economy	8.1	3.6	(12.1) <u>e/</u>	(12.6) <u>e/</u>	(32.5) <u>e/</u>	(31.0) <u>e/</u>	(12.7) <u>e/</u>

a. Data are from Table 19, p. 76, Appendix C.

b. Total expenditures minus Financing the National Economy, Social-Cultural Measures, Defense, and Administration.

c. Excludes fictitious entries of 45.5 billion rubles.

d. Excludes fictitious entries of 22.5 billion rubles.

e. Parentheses indicate estimates rather than official figures.

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Since 1948 it has not shown consistency in magnitude, but the main deviation was in the years 1951-54, when it included nuclear energy appropriations. The presumption is strong that few, if any, such selected outlays are included in the residual for Financing the National Economy. This probability is based on budgetary practices for selected years from 1937, as reviewed in Appendix C. In the event that some expenditures for defense are hidden in this category, they apparently have not varied significantly in the postwar period and therefore would not influence estimates of annual changes in defense outlays which were made without reference to them.

The last of the basic problems in the area of coverage and purpose lies in the meaning of the pricing system used for Soviet military purposes. It is reasonably clear that subsidies have been used from time to time in order to hold down the prices of military procurement items, particularly in the early stages of manufacture, when development costs are substantial and unit production costs high. For some purposes, the existence or nonexistence of subsidies makes no difference. For example, if one is interested in calculating a time series of expenditures in real terms, the use of subsidies would not provide any bias, provided that the subsidies had been accounted for in the price index used to compare ruble expenditures for different years.

In general, the existence of subsidies means simply that products are sold at prices somewhat lower than their real resource costs of production. The share of resources used by the defense establishment thus would be understated during a period of subsidy, if the proportion of defense output (in subsidized prices) to total output (in a combination of subsidized and nonsubsidized prices) is used as a criterion. The same considerations apply to prices that are abnormally high because of monopoly profits (rents) or turnover taxes, since the resource usage would be overstated by the amount of rent earned by the monopoly. The solution to either kind of distortion is simply to add the amount of subsidy to the official expenditures or to subtract the amount of rent from expenditures. Unfortunately, this cannot be done with precision.

The existence of subsidies might cause a bias in comparisons of defense expenditures between countries, although in principle the

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problem can be handled by the exchange ratio. That is, if ruble prices for defense goods are lower than real ruble costs, the ruble-dollar ratio ought to reflect the relatively low ruble prices. It is the latter procedure which is used in this report.

II. Categories of Defense Expenditures.

Budget appropriations to the Ministry of Defense are distributed to the various branches of the Soviet armed forces by the Finance Directorate of the Rear. In this section of this report, an investigation is made to identify as many categories of defense spending as possible and to relate them to the Finance Directorate or its representative unit. In many cases, the flow of spending cannot be traced beyond the purchasing organization. If this organization is identified as a military organization subordinate to the Ministry of Defense, its funds and credit are assumed to have been received from the Finance Directorate. In short, the expenditures of the Ministry of Defense are assumed to be identical with the expenditures of its subordinate organizations. This assumption seems realistic, in view of the many complications which would be introduced in its absence. Furthermore, in some cases of defense spending which are not included in the defense budget -- for example, nuclear energy -- the spending does not seem to be carried out by any organization of the Ministry of Defense.*

There is a second assumption often made throughout this section. It is that a class of military expenditures is properly indicated by a few examples. Classes of spending cannot, however, always be delimited in this fashion. In the following investigation, when the limits cannot be established from the evidence, it is noted.

A. Army, Air Force, and Navy.

The budgetary allocations to a standing army, air force, and navy normally cover the following categories of expenditures: (1) personnel costs, including pay, subsistence, clothing, and transportation; (2) maintenance and operations costs, covering such items as purchases of petroleum products, labor services for repair and overhaul of military equipment and facilities, operating costs of storage and supply

* For the organization of the Ministry of Defense, see Appendix A.

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systems, training costs, administration costs, costs of station or base equipment (such as laundries and kitchens) and organization equipment, and utilities services; (3) military public works, including barracks and living quarters; hospitals and medical facilities; storage facilities; military airfields; ports, harbors, and bases; repair facilities; research and development test facilities; and master planning and other construction activities; (4) research and development costs; (5) expenditures for reserve components; (6) some costs for mobilization planning and for the purchase of productive equipment and facilities for emergencies; and (7) the procurement of most military end items, including spare parts. The expenditures for major procurement are of great intelligence interest because they would ordinarily include the outlays for aircraft, naval vessels, combat and support vehicles, artillery, small arms, ammunition, guided missiles, and electronics and communications equipment.

Sources of information about Soviet budgetary and financial practice strongly suggest the presence of most of these seven categories of expenditures in the explicit Soviet defense budget. The exceptions include some expenditures for reserve components, most of industrial mobilization costs, and research and development.

1. Personnel.

The evidence for the inclusion of personnel costs in the defense budget is clear. These expenditures are made on the military district level by the military units, with approval by all the financial authorities of the military hierarchy. There is sufficient information to make reasonable estimates of the military pay bill for certain types of units.*

A major component of military personnel costs is pay. Estimates of the annual pay bill can be made for some areas

1/** It may be noted that in addition to military

* See footnote to Table 3, p. 31, below. See also Appendix B.

** For serially numbered source references, see Appendix E.

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personnel, the armed forces pay the wages and salaries of civilians employed by them. The navy, for example, pays personnel employed to keep records at naval depots, such as accountants, warehousemen, and administrators and also personnel employed for particular assignments, such as lumberjacks. 2/ Of the total pay bill, wages and salaries of the civilian component are estimated to make up from 10 to 15 percent.

In addition to pay, personnel expenditures include costs for food, clothing, and medical services. Observed medical expenditures by the navy are not only for medicines but also for sanatorium health resorts and the operation of children's institutions. 3/ Purchases of food and clothing for the army are made by the Directorate of Food Supply and the Directorate of Clothing and Equipment Supply, respectively, of the Chief Quartermaster Directorate. 4/ Food also is procured from the Ministries of the Light and Food Industry and of Agriculture and Procurement. []

[] 5/ The type of product varies with the season and the geographic location.

There are several ways by which the Soviet armed forces fully utilize their ruble allocations for the purchase of food. For one thing, they supplement purchases through normal trade channels with food raised on their own agricultural plots, although these agricultural pursuits probably do not contribute significantly to the aggregate military food consumption. Seven such establishments of the army have been identified in areas of troop concentrations.* It appears that these farms are run largely by military personnel and furnish most of their product to the military. A portion of their product may be sold to outside organizations for normal retail prices. 7/

The Soviet Navy is granted hay harvest rights 8/ and files reports on the numbers of horses, cattle, hogs, and poultry on hand. 9/ The hay harvest rights, granted in accordance with a 1948 decree of the Council of Ministers, presumably are for the horses held by the

* They are in or near Aniva, Kirovskiy Poselok, Koryaki, Lazo, Uglegorsk, Olovyannaya, and Chita. 6/

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navy for agricultural and other purposes. Troops are used to harvest the hay. The cost of the food produced on such agricultural plots -- such as potatoes, vegetables, 10/ and meats -- should, therefore, be below what the armed forces would pay another ministry. The proportion of these food products relative to total military food consumption, however, probably is not great.

A second way of economizing on food expenditures may be through the operation of the Chief Directorate of Military Trade (Glavvoyentorg) of the Ministry of Trade. This organization probably has two functions: to provide retail outlets where military personnel may purchase many items of consumption, including confections and other foods, and to act in some cases as purchasing agent for the military. 11/ To the extent to which these outlets are intended to provide part of the normal food requirements to military personnel for cash payments, they represent a saving to the military. This possibility is probably of little consequence.

The final and obvious way of economizing on expenditures for food and food products is by negotiating for price discounts through turnover tax exemptions or other price concessions. The evidence from Soviet financial literature suggests that the military generally pay the turnover tax but do not pay retail prices. 12/ The price seems to be the wholesale price including the turnover tax. There probably are a few exceptions to this generalization. In 1949 it was stated officially that the military and some other consumers in the Far North were exempt from the turnover tax on vegetables, potatoes, and fruits. * 13/ In the last 2 or 3 years, this exemption may have been extended to all customers. In the prewar years and perhaps some of the war years, the military may have been exempted from paying the turnover tax on some commodities, but it is hardly likely that they enjoyed complete exemption. ** In 1944, for example, official doctrine

* The continuation of such a policy might explain the turnover tax exemption granted to the MVD in the Far North in 1951 and 1952. 14/

** One source reports turnover tax exemption in 1939. 15/ Plotnikov attributes the loss of state revenue during the war "to the significant rise in requirement of the Soviet Army" 16/ The loss in revenue was also the result of shifts in productive resources and the reduction of income from socialist enterprises and organizations.

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indicated that the military paid the turnover tax. 17/ In 1954 this was also true.*

Many items of military clothing are purchased by the Directorate of Clothing and Equipment Supply of the Ministry of Defense, which often dispatches them directly to unit warehouses. 19/ Purchases by this directorate have been made from the Cotton Textile Combine imeni Stalin in Tashkent and from the Telma Sewing Plant. 20/ The prices paid (like the prices paid for food products) are probably the equivalent of the wholesale price plus the turnover tax. 21/ The military supply authorities keep close account of the clothing inventory, apparently keeping the records in ruble values. For instance, upon discharge of some of its personnel, a military unit returns to the Finance Directorate of the Ministry of Defense a credit sum equal to the amortized value of the returned clothing. 22/ Expenditures for clothing in the navy, likewise, are closely supervised. Inventories of clothing are reported carefully, including clothing returned by discharged persons. 23/ The higher authorities show concern over the scrapping of used garments when salvage is possible. 24/ Military laundries at which clothing repair takes place are maintained at the expense of the various units. 25/

A rather small category of personnel expenditures is for transportation of military personnel. When military personnel are on detached duty, their travel and other expenses are often handled by the Management Directorate of the Defense Finance Department. 26/ The normal travel expenses presumably are paid by the unit finance group.

Another expenditure of the armed forces for personnel is for housing and recreational facilities. 27/ In 1946 and again in 1948 there were changes in the administrative units responsible for the construction of military barracks, but the costs probably have always been met by the military. In addition to the initial construction costs of military housing, there are annual repair and operating costs, which are paid for by the responsible military unit. 28/ Among the

* The Military Trading Organization is noted as a distributor of military consumption goods and as a payer of the turnover tax. 18/

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operating costs are purchases of coal at prices known to include some transportation charges. 29/ Some furniture, presumably for the barracks, is made by the various units, as, for instance, the Kamchatka Flotilla. 30/ []

2. Maintenance and Operations.

It is difficult to identify all components of the broad category of expenditures for maintenance and operations. It is less difficult to identify the more important components. Repair and maintenance of military equipment constitute an important component of this general current account. There are categories of repair for different types of Soviet equipment, and the place of repair probably varies accordingly. The most thorough overhaul of army and air equipment as well as of naval equipment probably is contracted to the munitions industry, whereas less complete repair is carried on by the military units or at central ordnance repair facilities. The responsibility for the repair of tanks appears to lie with the Directorate of Repair and Supply, an office subordinate to the Chief Armored Tank Directorate, which purchases items used in repair. 31/ Major repair of naval vessels probably is carried out on contract for the Naval Forces by the Ministry of Shipbuilding. 32/ []

[]
[]
33/ For artillery and other ground weapons, responsibility probably is assumed by the Directorate of Engineering and Supply of the Ground Forces. 35/ In 1949, in conjunction with classes of repair, the Armored Tank Directorate, probably at a base such as No. 229 at Voroshilov, undertook the medium repair of a large number of tanks. 36/ Minor repairs probably are carried on at the division or unit level.

* []

[] that the naval representative was holding up payment for modernization work on certain vessels because of the lack of payment tables. 34/

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The largest element of repair cost is for the labor services of skilled workers. Many civilians are employed by the military, probably for some of their repair activities. In other cases, the munitions industry performs these services under contract. 37/

Another important expenditure for current operation is for petroleum and petroleum products. The air forces are important consumers of such products. Deliveries by the Oil Sales Directorates for the military are shipped either directly to the military consumers or, more often, to military depots, where petroleum is stored under the state reserves program. When the products are shipped from the state reserves, the military presumably become paying customers. These delivery procedures are related to the nature of petroleum fuels, many of which cannot be stored for more than 6 months to 1 year. The inventories of state reserves are thus revolving stocks.

The kinds of fuel purchased by the military establishment, in addition to the bunker fuel for the navy, include aviation gasolines B-100, B-95/130, B-93, and B-89; jet fuel T-1; diesel fuels; motor gasoline; kerosine; and lubricants. 38/ The 1950 wholesale prices (in the sixth zone) for these products vary from 455 rubles per metric ton of diesel fuel to 1,550 rubles per metric ton of aviation gasoline B-100. 39/

[]
[] 40/ This unit or its representative presumably approves payment. 41/ The prices paid apparently are the regular wholesale prices, including turnover tax, which are quoted to all consumers.* In prewar years, however,

* In 1949 the price paid by the military for aviation gasoline B-78 in Khabarovsk was 1,820 rubles per metric ton. In 1950, the wholesale price after price reductions was 1,296 rubles per metric ton in the sixth zone. 42/ Price reductions were to about 80 percent of the 1949 levels; hence the military seemed to have paid the full wholesale price in 1949.

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the military may have been exempt from the turnover tax on petroleum products.

In sum, the remaining maintenance and operations costs are important, even though any one component, with the possible exception of the supply and storage system, is relatively small. The Soviet armed forces pay for postal and telegraphic service, stationery, the operation of laundry and baths, furniture for quarters, repairs on barracks, some administrative services, and tailoring allowances for officers. 43/

Storage expenses must be considerable for the Soviet armed forces, with their high level of inventories. There are as many as up to 600 bases and depots in all. 44/ There is evidence that the armed forces pay for their storage facilities, as for example, in the case of ammunition. * Petroleum and petroleum products account for much storage space. Military end items probably make up most of the other goods stored. []

It is worth noting, in this connection, that the military charge other organizations for the use of military storage facilities. For instance, the civil flight training center at Shchelkovo in Moscow Oblast was required to pay the military for storage space while TU-2 aircraft were undergoing repairs. **

3. Construction.

Soviet military construction at present is not a large category of expenditure. It does, however, include activities of many types, and its history is interesting. Before 1938 the armed services carried on many construction activities, including such

** The Ammunition Supply Directorate of the Chief Artillery Directorate showed interest in the repair of ammunition storage facilities in 1954. 45/

** This charge would indicate civil flight training is not carried out by the military. 47/

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projects as military bases, barracks, and storage and aviation facilities. In 1941 these functions were transferred to the Directorate of Military Construction, which was formed and attached to the Council of Ministers for the express purpose of preventing military district commanders from exercising control over construction priorities. 48/ In 1946 this directorate was combined with certain construction organizations of the NKVD and the Ministry of Construction to form the Ministry of the Construction of Military and Naval Enterprises. 49/ The activities of the new ministry included the construction of defense production facilities.

In 1947 and 1948, Chief Directorates of Military and Naval Construction again were formed in the Ministry of the Armed Forces. In 1949 the Ministry of the Construction of Military and Naval Enterprises was combined with the Chief Directorate of the Construction of Machine Building Enterprises to form the Ministry of the Construction of Machine Building Enterprises. 50/ These reorganizations probably resulted in a redivision of responsibilities, leaving the construction of defense production facilities to the Ministry of the Construction of Machine Building Enterprises and the construction of military bases, barracks, and so on to the Ministry of Defense. For example, in the 1949 reorganization, an organization for industrial military electric power or assembly was transferred to the new construction ministry. 51/ The MVD also at this time may have resumed some of its former construction activities.

The Directorate of Military Construction probably had been responsible for the construction of munitions plants.* The construction of armament factories is now carried on either by the appropriate producing ministry or by the Ministry of Construction or by both. The Ministry of Defense may employ its own directorates or other directorates for the construction of the few producing enterprises under its control, as well as for building military bases, airfields, and so on.

In April 1951 a Chief Directorate of Special Construction was formed in the Ministry of Defense from the Directorate of Defense Construction of the Soviet Army, also of the Ministry of Defense. 53/

* In the 1946-50 plan this organization was treated in context with the Ministry of the Construction of Heavy Industry Enterprises and the Ministry of the Construction of Fuel Enterprises. 52/

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The mistaken identity is understandable, for one of the customers of the latter special construction group has been the Quar-
tering Directorate of the Ministry of Defense. 56/ It has had relations with the Finance Directorate of the Ministry of Defense. 57/ It also has been involved in a construction project believed to be an airfield runway. In 1953, one of its main customers was in the same minis-
try -- the Chukotka Air Group of the Directorate of Polar Aviation of the Chief Directorate of the Northern Sea Route, which purchased nearly 100 million rubles worth of construction services, presumably for airfield runways. 58/ During 1954 and early 1955 this directorate was involved in projects which probably were financed by the Ministry of Defense. 59/

In addition to the Chief Directorate of Naval Construction and the Chief Directorate of Special Construction there are the Central Directorate of Capital Airfield Construction and the Quarters Directorate in the Ministry of Defense. These organizations perform tasks which their titles indicate. There is direct evidence that the navy pays the bill for the construction of lighthouses, radio beacons, arms and ammunition storage facilities, and certain base instal-
lations. 60/ Expenditures for (1) ports, harbors, and bases and (2) hydrographic charts, buoys, and expeditions also may be under the Chief Directorate of Naval Construction. The existence of the latter category may be comparable to expenditures by the military for surveying and planning, such as the work conducted for them by Planning Institute No. 4 of the Ministry of Construction. 61/

The organizations of the Ministry of Defense probably are responsible for the construction and maintenance of facilities for military use, such as aircraft facilities, main rear storage facilities at the district level and storage facilities for military units, * and barracks and dwellings.

* The construction and capital repair plan of the 7th Air Army in 1948 was 22.6 million rubles. For a breakdown of 45 million rubles of planned construction for the Far East Military District for barracks, baths, laundries, workshops, and repair bases, see source 62/.

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These construction organizations probably pay list prices. Even during the early war period, no price privileges were granted to them. 63/

4. Research and Development.

Research and development activities are carried on jointly by the Soviet armed services and the defense production enterprises, with the exception of basic research carried out by the schools of higher learning and special programs such as the nuclear energy program. The development of new weapons begins with the Chief Military Technical Committee of the military forces and its subcommittees on artillery, aircraft, tanks, engineering, and so on.* When the appropriate technical subcommittee approves a new idea which has been worked out by one of the developmental research facilities of the military services, it is passed to the military construction bureau or to the construction bureau of an enterprise for prototype fabrication. The military construction bureau probably develops prototypes of new weapons, and the enterprises produce modifications of existing weapons. Once the prototype is produced and has the approval of the appropriate subcommittee and the full military technical committee, it is passed (in the case of the army) to the Chief of the Army General Staff. There the units to receive the new item are designated, and it is recommended to the Council of Ministers, who, with the economic planning authorities, determine a quantity and time schedule of production. 64/ The division of research and development expenditures between the military and the producing enterprises seems to be between expenditures leading through the development of a prototype for a new weapon and all other expenditures, including the costs of adapting the new weapon to production. This interpretation is supported by the fact that the Ministry of the Defense Industry has subordinate to it such organizations as artillery design bureaus and scientific research institutes which presumably are concerned with matters of production and materials. The Ministry of the

* This organizational designation was appropriate for the early postwar years.

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Aircraft Industry has a Scientific Research Institute of Aviation. 65/ The research centers, which are less concerned with applied research than with basic research of ultimate defense importance, are not subordinate to the military ministry. 66/

The precise division of expenditures between munitions plants and the military ministry becomes important only when the prices paid the munitions plants by the military do not include all development costs. There are two reasons to believe that development costs are not reflected fully in prices paid by the military. First, there is the general Soviet practice of setting prices for relatively long periods. Such a practice would preclude the possibility of writing off development costs with the first few units of output. Some of the costs, of course, could be spread out over the expected period during which the new items were to be produced. It is unlikely, however, that all development costs would be amortized in this manner. Second, Soviet practice seems to provide for the financing of part of these costs through budgetary allocations and intraministerial transfers of profits. 67/ There have been examples of increased allocations from the ministry to one of its plants when the plant has begun to produce a new product.*

5. Military End Items.

Major procurement of military end items, including spare parts, is of special intelligence significance.

There are several organizations in the Ministry of Defense concerned with the procurement, allocation, and storage of military end items. []

stationed at enterprises who accept finished products. occasionally []

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[]
[] Some of the organizations involved are the Chief Artillery Directorate (including an Ammunition Directorate), the Chief Armored Tank Directorate, the Directorates of Aviation Technical Service and Air Engineering Service, the Directorates of Supply and Equipment for both the Engineering Troops and Communications Troops, and the Automotive Directorate. These organizations apparently are responsible for purchasing, storing, and distributing to military units the kinds of items (including spares) implied by their titles. 70/

There is indirect evidence [] which indicates that the navy also purchases ammunition. The Artillery Directorate of the Naval Forces, with which Depot No. 1757 is associated, probably assembles ammunition. 71/ Also one of the enterprises under the Artillery Directorate of the Naval Forces has purchased ammunition packing. 72/

In addition to this evidence, there is the suggestion that the navy purchases naval mines and torpedoes. The Directorate of Mines and Torpedoes submits periodic reports to naval headquarters in Moscow concerning, presumably, inventories of the types of equipment suggested by its title. 73/ This directorate also may do some assembly work. []

It is probable that the artillery directorate and mine and torpedo directorate, respectively, are responsible for the procurement of naval artillery ammunition and mines and torpedoes. The financial arrangements probably are carried on through the Finance Directorate of the Ministry of Defense with producing plants or (for standard types of ammunition) with army depots.

* For example, []

[] indicated that 30 items Zh-7-A were prepared for sea. 74/

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[REDACTED] 75/ Most of these financial operations are interbank transactions involving the transfer of funds from one to another Gosbank account in Moscow.

There apparently are some transactions involving payments for equipment which take place either between military units or between a military unit and a producing enterprise and for which payment is made from the military unit's account with Gosbank. 76/ As noted above, equipment purchases are usually Moscow transactions. It is, therefore, probable that these transactions initiated by the military unit are the accounting entries for transfers of equipment between military units and purchases of construction materials for projects too small to be handled by normal construction units.

The Chief Artillery Directorate of the Ministry of Defense is the purchaser of an item designated as DON. DON is reported to be a telemetering system for use probably in larger missile systems such as surface-to-surface types. In mid-1952, Plant No. 4 of the Ministry of the Defense Industry at Krasnoyarsk either began producing the DON or incorporating DON components in a larger product. 77/ In view of the research and development procedures described above, the cost of DON to the Ministry of Defense probably does not include all research and development expenditures.

Expenditures for new naval vessels probably make up the largest single category of Soviet naval outlays. Some analyses suggest that expenditures for naval craft are capital outlays which come from other budget categories, but such an interpretation is not supported by the findings of this report. Indeed, there is considerable evidence suggesting that naval vessels are purchased by

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the naval ministry or naval forces from budgetary allocations to the military. It is highly probable that the Directorate of Shipbuilding of the Ministry of Defense is the administrative unit which approves, through its representative at the shipyard, the ship which is to be purchased. 78/ Upon acceptance, this directorate authorizes and makes payment.*

Payments for naval vessels are spread over the period of construction. There appear to be 28 payment stages for major naval vessels. []

[] 80/ For instance, in the case of one submarine hull, payment for production stage 24 preceded payment for stage 21. In another case, payment for stage 24 preceded payment for stage 16. 81/ In all cases, however, payment for stage 26 preceded payment for stages 27 and 28. Hence "it is believed that when stage 26 is paid for the hull is presented for state trials, and payment stages 27-28 indicate acceptance following successful completion of trials." 82/

The administrative procedures involved in adding a new naval vessel to the Soviet naval forces are similar to those of the US Navy. The decision to build a naval vessel is made by the Main Soviet Naval Staff. The Directorate of Naval Construction then draws up tentative blueprints, which are submitted by the naval forces to the Council of Ministers. When this body grants approval, the Ministry of Shipbuilding becomes involved. It draws up final blueprints and begins construction. During production, a representative of the navy is stationed at the shipyard or shipbuilding enterprise to supervise construction and to notify the Ministry of Shipbuilding of final acceptance by the navy. 83/

Evidence cited and reviewed elsewhere leaves little doubt that the navy is the organization which orders and pays for vessels produced for it by the Ministry of Shipbuilding. []

* For example, [] a senior official in the Directorate of Shipbuilding of the Ministry of Defense authorized acceptance and payment for the final stages of 2 self-propelled barges with unit prices at 5.8 million rubles. 79/

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The cost of other military end items is somewhat below prices of related Soviet industrial products. The reasons are two-fold: (1) producers of military end items probably have higher priorities for materials, services equipment, and technical skills*; and (2) the policy of subsidizing initial development costs in industry favors the armaments industry, in which technological change proceeds at a relatively high rate.

B. Militarized Security Troops.

troops evidently have a supply system of their own as well as air component and armored formations. The various units of troops have been organized over the past several years under a Chief Directorate of Internal Troops, a Chief Directorate of Border Troops, and a Directorate of Signal Troops.

The Directorate of Signal Troops at first was subordinate to the Ministry of State Security (MGB), and more recently to its successor, the Committee of State Security (KGB). During most of their history, the remaining two directorates were organized under the Ministry of Internal Affairs (MVD) or its predecessors and successors. In the period from June 1947 to March 1953, however, the Chief Directorate of Border Troops was subordinate to the MGB.

* The armament enterprises, however, do not seem to receive favorable prices on purchases of production equipment. In observed cases, they pay the same price paid by other industries for machine tools. 85/

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From late 1949 or early 1950 to March 1953 the Chief Directorate of Border Troops also was subordinate to the MGB. Before and after the indicated periods of subordination to the MGB, those organizations were subordinate to the MVD or its predecessors. In certain periods, as in the period after the March 1953 reorganization following Stalin's death and until late 1953, the two security organizations were merged as an internal security unit.

The KGB presently is a small agency controlling only the covert and secret police elements. The MVD serves many police functions, such as protecting and maintaining internal and border security and guarding and managing economic enterprises which use forced labor, and activities such as mining and construction operations. Most of the militarized units of the security troops probably are under the MVD.

It is estimated that the militarized units (border, internal, and signal troops) of the Soviet security troops comprise a total of about 400,000 troops. 87/

An informed source reports that the border troops do not have their own logistic system, but rely for support on the territorial military district where border units are stationed. 88/ The supplies include food and forage, clothing and equipment, and weapons and ammunition.

Reportedly the only items not procured from the military district are automotive equipment, POL, perishables, and hay and straw. The procurement of automotive equipment is said to be managed directly by an MVD organization (the Motor Transport Directorate), while the POL and perishables are purchased locally by the border units.

seemingly contradicts the above description of the system of supply. One report identifies a Chief Directorate of Military Supply (GUVS), MVD, which includes subordinate supply directorates for food (UPS), clothing, and equipment (UVS). 89/ The period covered by the report is 1947-52, which

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may explain, at least in part, the apparent contradiction. It was at the beginning of this period (June 1947) that the internal troops were transferred to the MGB, followed by a similar transfer, possibly in late 1949 or early 1950, of the border troops.

The exact relationship is not relevant to expenditures in so far as the military are paid for any logistic aid provided the security troops.

III. Defense-Related Activities.

A. Reserve Components.

Expenditures for the reserve components of Soviet military forces are of little importance insofar as the defense budget is concerned. Certain medical facilities may be provided by the military for reserve personnel, but the training and briefing expenses probably are met by the Voluntary Society for Cooperation with the Army, Air Force, and Navy (Dobrovol'noye Obshchestvo Sodeystviya Armii, Aviatsii i Flotu -- DOSAAF). DOSAAF is a "voluntary" organization which finances its running and equipment costs from unidentified budget allocations, with supplementary funds from membership dues. In recent years the annual dues have been a nominal amount of 3 rubles per person, but membership is large -- for example, making up about one-fourth of the population in the Baku area.* In the Khabarovsk area, the organization reported a balance of over 7 million rubles in 1952.^{91/} In 1954, DOSAAF was permitted to use 60 percent instead of 30 percent of its membership dues to procure equipment and other material.^{92/}

B. Civil Air Fleet.

At the beginning of World War II the armed services assumed control of the Civil Air Fleet and made it part of the military ministry. Later, perhaps in 1950, it was transferred out of the ministry

* The annual collection in Baku averaged 500,000 rubles from 1948 to 1953.^{90/}

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and attached to the Council of Ministers, where it has remained. 93/ This organization apparently operates passenger service and occasionally air freight service. 94/ It constructs and equips air terminals. 95/ It purchases gasoline, which sometimes is shipped by military transport, and certain replacement items, such as storage batteries for aircraft. 96/ It buys its own aircraft. When defense allocations are related to aircraft production, it should be recognized that the Civil Air Fleet is probably a consumer of a small number of aircraft each year.

C. Industrial Mobilization.

Expenditures for the purchase of productive equipment and material needed for conversion to war production are almost entirely outside the defense establishment. These items for mobilization reserves are under the supervision, and perhaps the ownership, of the Chief Directorate of State Material Reserves, which receives funds from the budget category Financing the National Economy. 97/ Much of the planning for mobilization, however, is done by the military authorities as well as by the various economic ministries. 98/

D. Foreign Trade in Military End Items.

The foreign trade account for military end items (as well as for other military supplies) is handled by the Ministry of Foreign Trade, and thus there may be a disparity between defense allocations for major procurement and production of armaments. The Engineering Directorate of the Ministry of Foreign Trade is the administrative unit which procures and exports armaments. 99/ This unit exports items such as aircraft equipment, marine equipment, ground armaments, and communications equipment, which are purchased directly from producing enterprises. 100/ In addition to new or reconditioned equipment purchased directly from the factory, the Engineering Directorate undoubtedly negotiates with the Soviet armed forces for used equipment to send abroad.

The procedure for obtaining used equipment from the military for export is not clear. In the European Satellites, procedures

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suggest that the Engineering Directorate pays the military a price for military equipment which takes into account its age and physical condition. In situations where military equipment is sent abroad but remains in Soviet custody, such as in East Germany, the Ministry of Foreign Trade is not involved. Aside from these two situations, there probably is some lending of Soviet military equipment to other countries of the Sino-Soviet Bloc, such as to Communist China, for a given period.

The possibility that the military establishment obtains funds from the sale of used equipment introduces the possibility of other sources of income or unusual economy measures. There are a few examples, besides those mentioned in connection with personnel pay, food, and clothing, of small economic enterprises being operated by the military. On occasion, military base 78 in Syzran' has produced pickax and carpenter ax handles. 101/ Commercial production by military base 229 in Voroshilov may have been valued in the millions of rubles in 1954. 102/ Other sources of income include money received for labor performed for other organizations by military personnel and sales of used oil. 103/ In 1944, part of 1.2 billion rubles was obtained from military economic enterprises.*

IV. Magnitude of Defense Expenditures.

The basis for estimating aggregate Soviet defense expenditures is the Soviet state budget, as explained earlier (under I) and, in more detail, in Appendix C. The aggregate annual expenditures are distributed among the main types of defense expenditure []

[] in the light of available information and US analogy.

Inevitably, estimates of the magnitude of the component of defense

* "Military units of the Red Army, by their own efforts and means, carried out in 1944 various work of repair and technical manufacture, spare parts and articles of supply in the amount of 3.3 billion rubles, obtained agricultural products from their subsidiary farms valued at 0.6 billion rubles, mobilized and paid in revenue to the extent of 1.2 billion rubles from the funds of their economic enterprises and from their incomes. In all, therefore, more than 5 billion rubles was economized in this way." 104/

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expenditures are subject to a degree of error. They are, however, as good as available information will allow, and they do provide a basis for judging the magnitude of the Soviet defense effort relative to other economic activities and relative to that of the US.

A. Military Personnel.

The estimated size of the Soviet active military establishment (including the militarized units of the MVD and MGB) for 1940 and 1944-55 is shown in Table 2.

Table 2

Size of the Soviet Armed Forces
1940 and 1944-55

Thousands			
Year	Size	Year	Size
1940	3,000 <u>a/</u>	1950	4,100 <u>d/</u>
1944	12,000 <u>b/</u>	1951	4,100 <u>d/</u>
1945	10,000 <u>c/</u>	1952	4,300 <u>e/</u>
1946	6,000 <u>c/</u>	1953	4,500 <u>e/</u>
1947	4,300 <u>c/</u>	1954	4,400 <u>e/</u>
1948	4,100 <u>d/</u>	1955	4,400 <u>e/</u>
1949	4,100 <u>d/</u>		

a. Rounded from the better of 2 estimates (2,800 and 3,500). 105/

b. 106/

c. Average for year and rounded.

d. 107/

e. 108/

The average annual rate of pay, including allowances, for the same years is shown in Table 3.* As noted in the explanatory

* Table 3 follows on p. 31.

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Table 3
Average Rate of Pay of the Soviet Armed Forces
1940 and 1944-55

Current Rubles			
Year	Average Pay per Man	Year	Average Pay per Man
1940	1,650 <u>a/</u>	1950	3,500 <u>c/</u>
1944	1,650 <u>a/</u>	1951	3,500 <u>c/</u>
1945	1,650 <u>a/</u>	1952	3,500 <u>c/</u>
1946	2,100 <u>b/</u>	1953	3,500 <u>c/ d/</u>
1947	3,500 <u>c/</u>	1954	3,500 <u>c/</u>
1948	3,500 <u>c/</u>	1955	3,500 <u>c/</u>
1949	3,500 <u>c/</u>		

a. 109/ No change is assumed from 1940 to 1945. The 1944 and 1945 figures are nearer regulation than actual pay.

b. Average for year, assuming that the increase to the 1947 rate took place at the end of September 1946 along with other wage increases.

c. 110/

d. The annual pay bills for each of 2 infantry divisions in 1953, including some few civilian employees, []

[] were 45 million and 48 million rubles, respectively. If 15 percent is deducted from there infantry division pay bills to allow for expenditures for civilian employees and perhaps local procurement, the 2 pay figures are reduced to 38 million and 41 million rubles, respectively. The Table of Organization of an infantry division is about 11,000 men. It is assumed that these Far East divisions are at full strength in view of their border location. The average pay per man is thus between 3,500 and 3,700 rubles per year. This range indicates that the estimates of the table are conservative.

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notes to Table 3, pay bill estimates for a few types of military units have been made from [] The estimates for two infantry divisions indicate an annual per capita pay bill range extending upward from the estimates of the table. For this reason, and because the relative pay scales for ground troops are likely to be below those for naval and air troops, the pay estimates as set forth are judged conservative. []

[] Assumptions concerning the Table of Organization and the percent of strength greatly affect the resulting average per capita pay. One such calculation is shown in Table 3; note d. []

Annual per capita expenditures for food and clothing are estimated as shown in Table 4.* []

Per capita and total personnel costs for the Soviet armed forces are shown in Table 5.** Because the figures of Tables 3 and 4 are regulation pay and upkeep, an arbitrary adjustment is made for 1944 and 1945 to account for the lower quality diets and voluntary loans of the military. An index of personnel costs from [] shows greater variation from year to year from 1950 to 1954, but the trend is much like that of Table 12.*** []

B. Maintenance and Operations and Military Construction.

The broad categories of expenditures for maintenance and operations (discussed above) cannot be estimated directly. They have been estimated in the aggregate, therefore, as a percentage of total defense outlays on the basis of US practice.

Soviet accounting for maintenance and operations seems to differ from US procedure in two main respects. First, Soviet expenditures for maintaining industrial facilities and equipment which***

* Table 4 follows on p. 33.

** Table 5 follows on p. 34.

*** P. 46, below.

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Table 4

**Food and Clothing Costs per Capita
of the Soviet Armed Forces
1940 and 1944-55**

Current Rubles			
Year	Food a/	Clothing b/	Total
1940	N. A.	N. A.	2,700 <u>c/</u>
1944	N. A.	N. A.	3,000 <u>c/</u>
1945	N. A.	N. A.	3,000 <u>c/</u>
1946	N. A.	N. A.	4,400 <u>c/</u>
1947	N. A.	N. A.	6,400 <u>c/</u>
1948	4,400	1,200	5,600
1949	4,200	1,160	5,360
1950	3,500	1,020	4,520
1951	3,100	1,000	4,100
1952	2,800	1,000	3,800
1953	2,500	950	3,450
1954	2,500	950	3,450
1955	2,500	950	3,450

a. Estimated from the estimated military daily ration and known prices.

b. Adjusted by changing average life of clothing to 3 years from 4 and deleting personal equipment. 111/

c. Computed from the 1948 total with the following estimated price index from 1940 and 1944-48: 49, 54, 54, 79, 114, 100. The figures for 1944 and 1945 are nearer prescribed standards than actual. See Table 5, p. 34, below.

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Table 5

Personnel Costs of the Soviet Armed Forces a/
1940 and 1944-55

Year	Per Capita (Current Rubles)	Total (Billion Current Rubles)
1940	4,350	13.1
1944	3,750 b/	45.0
1945	4,000 b/	40.0
1946	6,500	39.0
1947	9,900	42.6
1948	9,100	37.3
1949	8,860	36.3
1950	8,020	32.9
1951	7,600	31.2
1952	7,300	31.4
1953	6,950	31.3
1954	6,950	30.6
1955	6,950	30.6

a. Based on Tables 2, 3, and 4, pp. 30, 31, and 33, respectively, above.

b. Adjusted downward from 4,650 rubles (the sum of personnel costs in Tables 3 and 4), by 20 percent in 1944 and by 10 percent in 1945, to allow for war-time scarcities.

are held as mobilization reserves are not included in defense appropriations. Second, Soviet reserves and training expenditures (training in this context does not include regular field maneuvers) are small and in any case probably are handled by such organizations as DOSAAF. Besides adjustments made for these classification differences, US allocations should be adjusted to allow for extreme variations in expenditures on organizational equipment and supplies

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such as furniture, fixtures, office machines, and special-purpose clothing, which were associated with the rapid post-Korean War build-up. Finally, expenditures for maintenance spares and spare parts, which properly may be considered as major procurement items, also should be deducted from US maintenance and operations expenditures, when used for purposes of analogy with Soviet expenditures.

US maintenance and operations expenditures for the fiscal years 1951-55 are shown in Table 6, * before and after adjustment. They are compared with total US defense expenditures for the same years. The total, likewise, must be adjusted to correspond to Soviet practice. In addition to the two deductions above, expenditures for the procurement of mobilization facilities and equipment and for reserve components must be excluded. As noted above in Section III, A and C, these classes of expenditures are not made from the Soviet defense appropriation. **

The proportion of maintenance and operations expenditures in total US defense expenditures declines from about 31 percent in 1951 to nearly 20 percent in 1953-55. The high percentages in 1951 and 1952 may be explained by the reopening of military bases and a buildup of inventories, which resulted in expenditures in excess of annual consumption. From Table 2, *** it is clear there was no similar increase in the size of the armed forces of the USSR. Hence, these 2 years may be discarded for purposes of comparison. The estimate for Soviet expenditures for maintenance and operations thus is about 20 percent of the total defense allocation.

Construction expenditures by the US Department of Defense have been as follows since 1951, in fiscal years:

* Table 6 follows on p. 36.

** Expenditures for maintenance spares and spare parts, on the other hand, are made from Soviet defense appropriations and have not been subtracted from the US total.

*** P. 30, above.

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Table 6

Expenditures for Maintenance and Operations and for Total Defense in the US a/
Fiscal Years, 1951-55

Million Current US \$				
Fiscal Year	Maintenance and Operations	Adjusted Maintenance and Operations b/	Total Defense	Adjusted Total Defense c/ as a Percent of Total
1951	6,715	5,883	20,043	19,068
1952	11,682	8,039	38,822	34,882
1953	10,379	7,678	43,713	40,139
1954	9,357	7,502	40,484	38,287
1955	8,767	7,014	37,575	35,475

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a. 112/

b. Total Maintenance and Operations less recruiting and training, industrial mobilization, and maintenance spares and spare parts. Organizational equipment and supplies are subtracted and reintroduced, at an average 1951 and 1954 level of US \$925 million.

c. Total Defense expenditures less production equipment and facilities, recruiting and training, reserve components, and industrial mobilization. Organizational equipment and supplies are included at US \$925 million per year.

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1951	\$0.5 billion
1952	\$1.8 billion
1953	\$1.9 billion
1954	\$1.7 billion
1955	\$1.7 billion

As a percentage of adjusted total US defense expenditures, these amounts vary from a low of 2.5 percent in 1951 to 5 percent in 1952, with the remainder of the values slightly in excess of 4 percent. Hence a rough estimate for Soviet military construction is 4 percent of total defense expenditures.

These estimates of Soviet expenditures on the maintenance and operation of military forces and on military construction are used in the following section in deriving an estimate of expenditures on military end items.

C. Military End Items.

In this section, Soviet expenditures on military end items are estimated by subtracting from total defense expenditures the expenditures already estimated, for personnel, maintenance and operations, and construction. The resultant estimates are converted in turn into a series in constant rubles for expenditures on military end items, by means of a price index for military end items, based on an investment price index.

In Table 7* and Table 8,** Soviet defense expenditures are totaled and distributed by major components, outlays for military end items being determined as residuals.

* Table 7 follows on p. 38.

** Table 8 follows on p. 39.

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Table 7

Soviet Defense Expenditures, Including Expenditures
for Militarized Security Troops
1940 and 1944-55

Billion Current Rubles			
Year	Explicit Appropriation <u>a/</u>	Militarized Security Troops <u>b/</u>	Total Defense
1940	56.8	2.0	58.8
1944	137.8	2.0	139.8
1945	128.6	3.5	132.1
1946	73.6	6.0	79.6
1947	66.3	8.0	74.3
1948	66.3	8.5	74.8
1949	79.2	8.0	87.2
1950	82.9	7.0	89.9
1951	93.9	(7.0) <u>c/</u>	100.9
1952	108.6	7.5	116.1
1953	105.0	(5.5) <u>c/</u>	110.5
1954	100.3 <u>d/</u>	(6.5) <u>c/</u>	106.8
1955	112.1 <u>d/</u>	(7.0) <u>c/</u>	119.1

a. Data may be found in annual budget reports of the USSR.

b. These figures are about one-third the estimated appropriation for both the MVD and MGB. This proportion is about the proportion of militarized personnel to total security personnel.

c. Parentheses indicate interpolation or extrapolation.

d. Planned.

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Table 8

Major Components of Soviet Defense Expenditures
1940 and 1944-55

Billion Current Rubles				
Year	Total <u>a/</u>	Personnel <u>b/</u>	Maintenance and Operations and Construction <u>c/</u>	Military End Items <u>d/</u>
1940	59	13	14	32
1944	140	45	30	65
1945	132	40	30	62
1946	80	39	19	22
1947	74	43	18	13
1948	75	37	18	20
1949	87	36	21	30
1950	90	33	22	35
1951	101	31	24	46
1952	116	31	28	57
1953	111	31	27	53
1954	107	31	26	50
1955	119	31	29	59

a. Rounded from Table 7, p. 38, above.

b. Rounded from Table 5, p. 34, above.

c. Estimated at 24 percent of total expenditures, on the basis of US analogy, as explained in the text, pp. 32-37, above. Estimates for maintenance and operations for 1944 and 1945 have been reduced from 20 percent to 18 percent of the total, in order to allow for wartime scarcities.

d. Total expenditures minus other expenditures.

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There are far too few known unit prices of Soviet military end items to permit the construction of a price index covering the past few years. A problem inherent in price indexes of any kind involves accounting for quality changes. This problem would be exaggerated in an index constructed from prices of military end items over a period. Presumably this consideration is one argument, aside from the lack of data, in favor of using a price index for comparable goods. In addition to the quality or technological aspects, prices of military end items are especially dependent on scale of output because they are seldom produced at full capacity levels and models are so often changed. This introduces a problem in comparing World War II and postwar defense efforts, as noted below.

Three indexes of price movements are shown in Table 9 which might be used in constructing a price index for Soviet military end items.

Table 9

Selected Soviet Price Indexes
1940 and 1945-55

(1945 = 100)

Year	Industrial Capital Investment <u>a/</u>	Industrial Capital Equipment <u>a/</u>	Trucks
1940	95	N. A.	83
1945	100	100	100
1946	102	N. A.	N. A.
1947	107	N. A.	N. A.
1948	113	N. A.	111
1949	151	132	(157) <u>b/</u>
1950	124 <u>c/</u>	94 <u>c/</u>	111
1951	117	N. A.	107
1952	110	N. A.	96
1953	111	N. A.	92
1954	109	N. A.	90
1955	N. A.	N. A.	89

a. 113/

b. See text, p. 41, below.

c. Average of two values for January and July.

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The industrial capital investment index covers the price of construction as well as of the equipment installed. It is clear that construction prices increased more from the end of the war through 1949 and declined less in 1950 than capital equipment prices. Indeed, the 1950 construction price index (for total investment) relative to 1945 stood at 132, and stood at 124 for total industrial capital investment.* Because military end items are closer in characteristics to capital equipment than to total industrial investment, the index for industrial capital investment would overstate the level of postwar prices relative to 1945 for military end items. The price index for trucks, an important military end item, gives lower values relative to 1945 than the capital investment index from 1950. Its high value in 1949 probably represents the small number of trucks in the sample. Prices for truck models continuously produced from the end of the war increased more in 1949 than prices for trucks introduced in 1947 or 1948. Hence the 1949 value may well overstate price increases for all trucks.

In addition to the upward bias in the industrial investment price index as a measure of armament price index, there is a more important difficulty in its use for the early postwar years. During World War II, prices for war goods declined considerably, according to Voznesenskiy, whereas the price for all industrial commodities remained relatively constant. 115/ Presumably these decreases were the results of scale of output. With the decrease in military output in the early postwar years, scale economies may have been largely lost. As a result, armament prices probably increased at higher rates than investment goods at least until 1948.

In Table 10** it is assumed that the gap between armament prices and investment prices had been closed by 1948. There may

* It is interesting to note the close correspondence between the prices of military construction and total construction. With 1945 as a base, the price index for military construction in 1950 was 135. 114/

** Table 10 follows on p. 42.

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Table 10

Estimated Soviet Armament Price Index
1940 and 1944-55

(1951 = 100)

<u>Year</u>	<u>Estimated Armament Price Index ^{a/}</u>
1940	81
1944	49 ^{b/}
1945	(61) ^{c/}
1946	(73) ^{c/}
1947	(85) ^{c/}
1948	97 ^{c/}
1949	129
1950	106
1951	100
1952	94
1953	95
1954	93
1955	93

a. From the index for capital investment in Table 9, p. 40, above, with the exception of adjustments. The base year was changed from 1945 to 1951 because the value for 1945 is interpolated.

b. This figure is estimated from Voznesenskiy, who noted that the price of war goods in 1942 was 72 percent of prewar levels and that cost reductions in machine building accumulated to about 40 percent of 1940 costs by the end of 1943. 116/

c. Parentheses indicate interpolation.

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still be a slight upward bias in the estimated armament price index because of its inclusion of capital construction.

A check on the importance of the bias in the price index -- particularly for the years 1949 and 1950, when price changes were great -- may be made by using a rough capital equipment index based on the values of Table 5* and filled in for unavailable years by assuming parallel movements with the capital investment index and by interpolating 1946 and 1947. The resulting index, with the Voznesenskiy figure for 1944, is as follows for 1940 and 1944-55 (1951 = 100): 108, 65, 77, 89, 102, 115, 154, 106, 100, 95, 96, 94, 94. The figure for aggregate production in 1946-55 obtained by using this index is 4 percent less than that obtained by using the index in Table 10. If the war years 1944-45 are added, the difference becomes 11 percent. This result emphasizes the different relation between given prewar and postwar price levels by the two indexes.

Table 11** shows expenditures, in constant rubles, on military end items to be at a postwar peak in 1955, about 3 percent higher than expenditures in 1952 and about one-half the highest war-time levels. The index figures for real outlays on military end items of Table 11 should be considered with different degrees of certainty because of the wartime and peacetime divergence of indexes for military end items and other goods. The values for the years from 1948 to 1955 are thus more reliable than the values for 1940 and 1944 to 1946. The values from 1950 to 1955 are the most reliable in this sense.

V. Comparative Measures of Soviet Defense Expenditures.

A. US and Soviet Armament Expenditures.

International comparisons of expenditures for military equipment presuppose currency exchange ratios for the monetary units as spent for armament.

* P. 34, above.

** Table 11 follows on p. 44.

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Table 11

Soviet Expenditures for Military End Items
1940 and 1944-55

<u>Year</u>	<u>Outlays a/ (Billion 1951 Rubles)</u>	<u>Index (1951 = 100)</u>
1940	40	87
1944	133	289
1945	102	222
1946	30	65
1947	15	33
1948	21	46
1949	23	50
1950	33	72
1951	46	100
1952	61	133
1953	56	122
1954	54	117
1955	63	137

a. From Tables 7 and 10, pp. 38 and 42, respectively, above.

The prices given are compared with estimates of the dollar cost of the items on the assumption of production by US manufacturers. The resulting ratio is between 5 and 7 rubles per dollar and seems to be appropriate for 1951. By means of those ratios, Soviet outlays are converted to constant dollars and presented below. The results are checked against independently estimated aggregate dollar costs of expected production of Soviet military equipment.

The accuracy of the expression of the Soviet military program in dollars depends in large measure on the dollar cost estimates of

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Soviet equipment. To the extent that these estimates do not reflect all resource costs, the resulting dollar value of the Soviet program is understated. This bias is related to the pricing procedures in the US military program. These prices sometimes may not reflect all US costs, because the Department of Defense provides equipment which is unique to the production of a particular piece of armament without charge to the manufacturer. Yet, in the final analysis, the Department attempts to include these expenditures in the complete price of the item in question. These prices, which serve as the basis for the dollar cost estimates of the Soviet equipment, are probably complete in most cases and tend only slightly to understate the Soviet armament program.

The few available examples of ruble prices for Soviet military equipment or items of a similar nature are shown in Table 12.* These prices, when compared with their estimated dollar costs, show ruble-dollar ratios ranging from less than 4 to 1 to more than 8 to 1. The largest items fall within a range of about 5 to 1 to 7 to 1. These ratios are somewhat below ratios for other Soviet fabricated metal products, which range from 7.5 to 1 to 9.9 to 1. ^{117/} These results suggest that the Soviet armament ruble is worth 40 to 50 percent more, as measured in dollars, than the ruble spent for fabricated metal products.

In Table 13** the values for Soviet military end items in constant rubles (given in Table 11) are converted to dollars by means of the ruble-dollar ratios of 5 to 1 and 7 to 1. These ruble-dollar ratios are assumed to apply in 1951, and resulting dollar amounts are thus in 1951 dollars. The dollar estimates may be compared in 1944, 1952, and 1953 with dollar estimates independently derived. The independent estimates, also given in Table 13, are based on previous estimates of Soviet armament production, in physical units, multiplied by estimated dollar costs. The independent estimates for 1952 and 1953 are roughly US \$10 billion, whereas the residual estimates derived in the present***

* Table 12 follows on p. 46.

** Table 13 follows on p. 47.

*** Continued on p. 48.

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Table 12

Ruble and Dollar Prices for Selected Items
of Soviet Military Equipment

Item	Soviet Price (Rubles)	US Price of Comparable Items (Dollars)	Ruble-Dollar Ratio
Carbine (7.92-mm)	297 <u>a/</u>	60 to 80 <u>b/</u>	2.7 to 5.0 : 1
Cartridge (7.92-mm, per thousand)	460 <u>a/</u>	55 to 100 <u>b/</u>	4.6 to 8.4 : 1
150-hp tug (per hp)	4,210 <u>c/</u>	500 to 600 <u>d/</u>	7.0 to 7.7 : 1
<u>Trucks</u>			
GAZ-51	15,000 to 16,000 <u>e/</u>	3,000 to 3,500 <u>f/</u>	4.5 to 5.3 : 1
GAZ-63	19,000 to 20,000 <u>e/</u>	3,700 <u>g/</u>	5.1 to 5.4 : 1
GAZ-67	11,000 to 12,000 <u>e/</u>	1,850 <u>h/</u>	5.9 to 6.5 : 1
<u>Aircraft</u>			
MIG-15 airframe	865,000 <u>i/</u>	112,900 to 168,000 <u>j/</u>	5.2 to 7.7 : 1
Li-2	700,000 <u>k/</u>	124,000 <u>l/</u>	5.6 : 1
Li-2	741,000 <u>m/</u>	141,000 <u>n/</u>	5.3 : 1

- a. Retail price for sporting equipment in 1954. 118/
b. Sporting and army items in 1954. 119/
c. Probable price given in inventory in 1954. 120/
d. Price in 1954.
e. Mid-1953 price. 121/
f. Price range in 1953 for GMC and Dodge trucks of similar types.
g. Price in 1953 for a Marmon-Herrington truck of similar type.
h. Price in 1953 of a similar type of jeep.
i. Airframe price in June 1950. 122/
j. Estimated dollar cost of similar airframe in 1950 prices.
k. Price in August 1947. 123/
l. Estimated dollar cost of C-47-type aircraft in 1947 prices.
m. Price in June 1950. 124/
n. Estimated dollar cost of C-47-type aircraft in 1950 prices.

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Table 13

Dollar Value of Soviet Military End Items
1940 and 1944-55

Billions 1951 US \$

<u>Year</u>	<u>Lower Limit a/</u>	<u>Upper Limit b/</u>	<u>Independent Estimates c/</u>
1940	6	8	N. A.
1944	19	27	18
1945	15	20	N. A.
1946	4	6	N. A.
1947	2	3	N. A.
1948	3	4	N. A.
1949	3	5	N. A.
1950	5	7	N. A.
1951	7	9	N. A.
1952	9	12	10
1953	8	11	10
1954	8	11	N. A.
1955	9	13	N. A.

a. Values of Table 11, sp. 44, above, converted at a 7:1 ruble-dollar ratio.

b. Values of Table 11, p. 44, above, converted at a 5:1 ruble-dollar ratio.

c. Converted from 1945 dollars by the Bureau of Labor Statistics price index for machinery and motive products. 125/

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report vary from US \$9 billion to US \$12 billion in 1952 and from US \$8 billion to US \$11 billion in 1953. Given the range of error in both types of estimate, this close correspondence must be more the result of counterbalancing errors than of accuracy of estimates of military production or procedures used in the budget analysis. The correspondence in 1944 is not so close, for the independent estimate falls below the range set by the budget analysis. This overstatement of the budget data, however, may be related to the assumption of a constant ruble-dollar ratio, aside from price changes, for the postwar period. Soviet postwar advances in productive efficiency may well have exceeded those of the US, and a ruble-dollar ratio appropriate for 1951 and later years, therefore, may be too low for 1944.

In summary, the correspondence between the two sets of estimates should be interpreted as slight confirmation of the aggregate magnitude of Soviet spending on military end items but not as proof that present output estimates or budget analyses are correct.*

In Table 14,** US and Soviet expenditures for military end items are compared for the postwar period. In 1951 prices, Soviet expenditures from 1946 to 1955 total from US \$60 billion to US \$80 billion, whereas US expenditures have exceeded US \$90 billion. The distribution over the period shows Soviet outlays exceeding US outlays on the average up to about 1951.^a From that year on, US spending has greatly exceeded that of the USSR, so that, for the whole period, US outlays have been 10 to 50 percent greater than those of the USSR.

B. Soviet Defense Expenditures and National Product.

As a component of national product, defense expenditures must be expressed in such a way that they represent the proportion

* By the same token, it is not confirmation of the estimates of dollar cost per unit, which are judged to be conservative.

** Table 14 follows on p. 49.

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Table 14

US and Soviet Expenditures for Military End Items
1946-55

Billion 1951 US \$

<u>Year</u> <u>a/</u>	<u>US</u> <u>b/</u>	<u>USSR</u> <u>c/</u>
1946 } 1947 }	8	{ 4 to 6 2 to 3
1948	2.4 <u>d/</u>	3 to 4
1949	2.9 <u>d/</u>	3 to 5
1950	3.3 <u>d/</u>	5 to 7
1951	5.4	7 to 9
1952	15.5	9 to 12
1953	19.6	8 to 11
1954	17.6	8 to 11
1955	16.1 <u>e/</u>	9 to 13
Total	<u>91</u>	<u>60 to 80</u>

a. For the US, the fiscal year; for the USSR, the calendar year.

b. Adjusted to 1951 prices by the Bureau of Labor Statistics price index for machinery and motive products. 126/ The US data are not comparable to those of source 127/. These data are expenditures for military equipment, whereas the data of the other report are dollar values of deliveries of military equipment, which statistically have led expenditures in this period.

c. From Table 13, p. 47, above.

d. Anticipated expenditures. 128/

e. Anticipated expenditures.

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of total economic resources used for military purposes. The services of military personnel in this respect should reflect what these individuals would receive in alternative employments, which may not correspond to military pay and allowances. Hence for this purpose it is convenient to consider defense expenditures in two components: (1) armament and (2) all others, including personnel. The predominant portion of the latter class of expenditures is for personnel, both military and civilian. Because of this predominance, an annual increment of 2 percent is allowed in the second category to account for productivity increases, -- that is, in alternative employments. The results of these calculations are shown in Table 15 as indexes.

Table 15

Indexes in Constant Prices
of Soviet Defense Expenditures a/
1948-55

(1953 = 100)

<u>Year</u>	<u>Armament</u>	<u>Personnel and All Other</u>	<u>Total</u>
1948	38	90	64
1949	42	92	67
1950	59	94	77
1951	82	96	89
1952	109	98	104
1953	100	100	100
1954	96	102	99
1955	113	104	109

a. The basis of this twofold breakdown is given in another report, 129/ together with a discussion of other possible breakdowns. The only difference between the two calculations is for armament in the last year. The value in this table is from Table 13, p. 47, above, based on planned budget allocations. The figure in the other report is based on estimates of output.

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APPENDIX A

ORGANIZATION OF THE SOVIET MINISTRY OF DEFENSE

1. General Organization. *

Early in 1946 the People's Commissariat of Defense and the People's Commissariat of the Naval Fleet were consolidated into the Ministry of the Armed Forces. This ministry was split on 25 February 1950, and the Military Ministry and the Naval Ministry were formed. Under the March 1953 reorganization, these ministries were recombined into the present Union Ministry of Defense. Despite these changes, the Soviet military establishment has, with few exceptions, remained basically the same. **

During and between the reorganizations the bulk of the administrative changes consisted of splits, mergers, or transfers of organizations within the military establishment. For example, the Chief Inspectorate of the Armed Forces, which was a staff attached to the Ministry of the Armed Forces (1946 to February 1950), was split into a Chief Inspectorate of the Soviet Army and a Chief Inspectorate of the Naval Forces in February 1950 -- that is, at the time of the formation of the Military and Naval Ministries. With the March 1953 reorganization and the re-creation of the unified ministry, the Chief Inspectorate once again came under central ministerial control.

Changes affecting more than the intraministerial organization of the military establishment took place in two fields, construction and civil aviation. The most important instance of the transfer of

* Information on general organization is in large part from a [] [] 130/ To avoid repetition, footnotes are used only to denote material from other sources.

** See Figure 1, following p. 52.

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an organization from the military establishment is that of the Chief Directorate of the Civil Air Fleet, which was shifted to the Council of Ministers, probably in early 1950. The armed forces had taken control over the Civil Air Fleet at the beginning of World War II, and such control had increased gradually to the point that in 1948 the Chief Directorate of the Civil Air Fleet was made, by formal decree, a part of the Ministry of the Armed Forces. Although it is fairly well established that the Civil Air Fleet is presently subordinate to the Council of Ministers, the exact time of such transfer is not known. It was probably at the time of the reorganization in early 1950. 131/

The Soviet military establishment over the past 10 years apparently has become responsible for some construction work previously done by outside organizations. This conclusion is drawn from a comparison of the organization of the present ministry with that of the Ministry of the Armed Forces in 1946. At that time the Ministry of the Armed Forces did not have any directorates for military or naval construction. Early in the same year the People's Commissariat of the Construction of Military and Naval Enterprises was formed out of "the Chief Directorate of Military-Industrial Construction attached to the Council of People's Commissariats, construction organizations of the People's Commissariat of Construction and NKVD, SSSR." 132/ []

[] 134/ Chief Directorates of Military Construction and of Naval Construction were established within the Ministry of the Armed Forces in 1947 and 1948, respectively. 135/ On 9 March 1949, a decree of the Presidium of the Supreme Soviet consolidated the Ministry of the Construction of Military and Naval Enterprises, and the Chief Directorate of the Construction of Machine Building Enterprises (attached to the Council of Ministers) into a Ministry of the Construction of Machine Building Enterprises. 136/ A survey of [] the ministry from 1949 to 1953 reflects no evidence of military construction or of any organizations with names suggesting that such construction is carried on. This negative evidence appears to support the contention that the military establishment took over much of the construction work formerly done by the

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ORGANIZATION OF THE SOVIET MINISTRY OF DEFENSE

1954

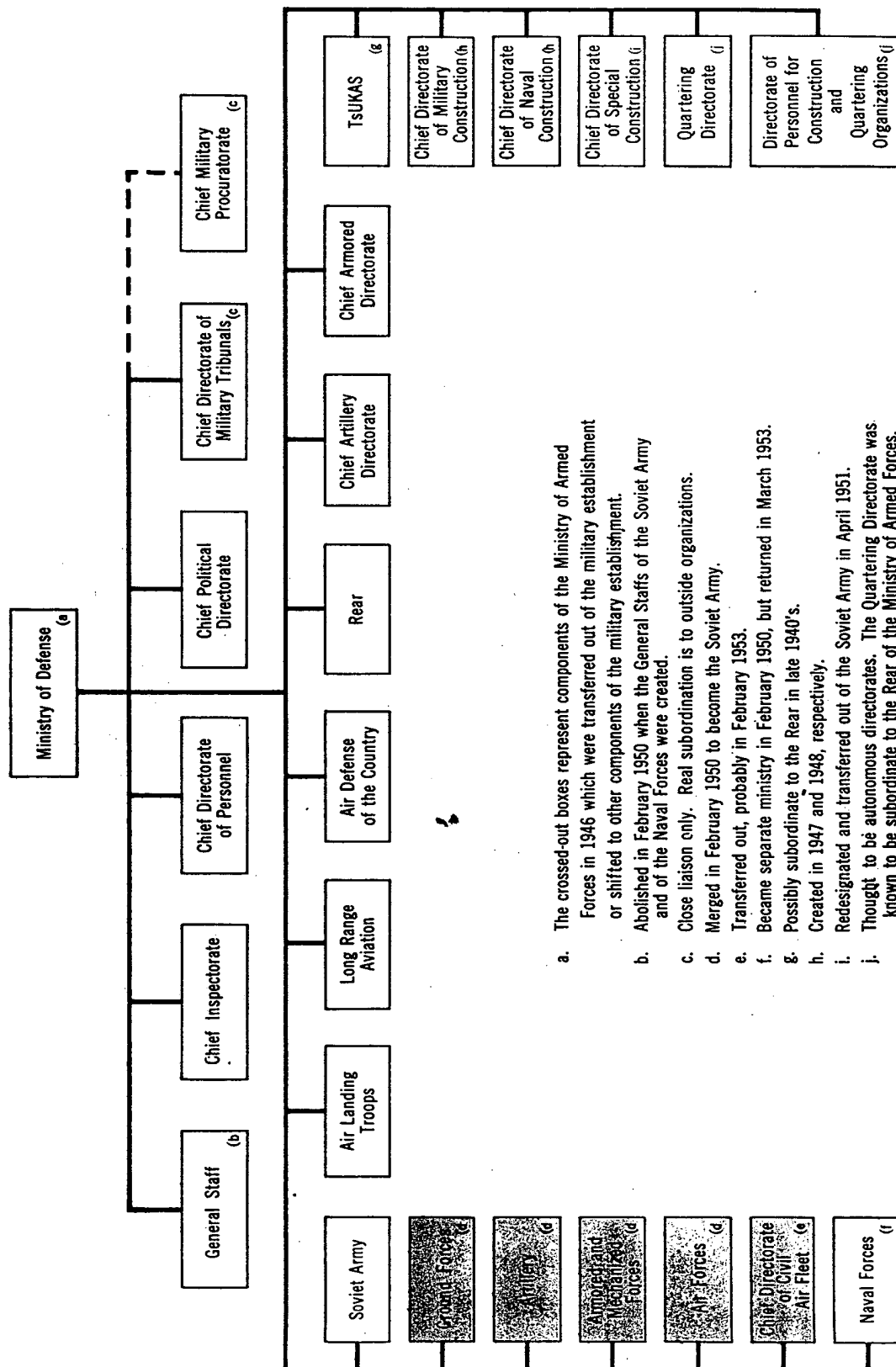


Figure 1

- The crossed-out boxes represent components of the Ministry of Armed Forces in 1946 which were transferred out of the military establishment or shifted to other components of the military establishment.
- Abolished in February 1950 when the General Staffs of the Soviet Army and of the Naval Forces were created.
- Close liaison only. Real subordination is to outside organizations.
- Merged in February 1950 to become the Soviet Army.
- Transferred out, probably in February 1953.
- Became separate ministry in February 1950, but returned in March 1953.
- Possibly subordinate to the Rear in late 1940's.
- Created in 1947 and 1948, respectively.
- Redesignated and transferred out of the Soviet Army in April 1951.
- Thought to be autonomous directorates. The Quartermaster Directorate was known to be subordinate to the Rear of the Ministry of Armed Forces.

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Ministry of the Construction of Military and Naval Enterprises. Furthermore, some personalities connected with this ministry later became associated with the newly created chief construction directorates within the military establishment.

The most important changes within the military establishment over the past 10 years have been the following: (1) the establishment of a separate naval ministry and its dissolution 3 years later, (2) the creation of the Soviet Army, and (3) the elevation in status of certain organizations connected with construction.

On 25 February 1950 the naval forces were taken out of the Ministry of the Armed Forces and constituted as a separate naval ministry. Although the structure of the naval forces remained basically the same, a General Staff of the Naval Forces came into being, and the activities of the Rear of the Naval Forces expanded to include more than its previous responsibility for specialized naval supply. This division into two ministries also resulted in the division of other organs (inspectors, military tribunals, military procuratorate, personnel directorate, and political directorate) as well as the General Staff. Each of these was divided into two separate organs -- one for the Soviet Army, the other for the naval forces. All were reconstituted as central organizations in March 1953.

Another consequence of the February 1950 reorganization was the official birth of the Soviet Army. It was the result of the consolidation of the Ground Troops of the Armed Forces, the Artillery of the Armed Forces, the Armored and Mechanized Troops of the Armed Forces, and the Air Forces of the Armed Forces into one entity.

From an organizational point of view, the responsibility of the military establishments for construction has grown since World War II. []

[] but it is now believed to have a higher status. In April 1950 the Directorate of Defense Construction of the Soviet Army was redesignated the Chief Directorate of Special Construction and made directly subordinate to the Military Ministry. Since March 1953 it

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has been subordinate to the Ministry of Defense. It is also probable that a Quartering Directorate and a Directorate of Personnel for Construction and Quartering Organizations are now under the Ministry of Defense rather than at an intermediate echelon. 138/ Most of the construction and quartering activities of the military establishment, at least since March 1953, have been put under the supervision of a Deputy Minister of Defense for Construction. The Chief Directorate of Naval Construction, however, may be subordinate to the Deputy Commander in Chief, Naval Forces, for Shore Construction, 139/ but it also is possible that it may be under the Deputy Minister of Defense for Construction.

2. Command Organization.

Command of the military establishment resides in the Minister of Defense. He is assisted by a number of deputy ministers, some of whom also direct particular components of the ministry, 140/ The over-all planning and coordination within the ministry is carried out by the General Staff of the Soviet Army and Navy. 141/ In addition, each major component has a staff. These latter staffs are assumed to be primarily administrative in support of General Staff policies, inasmuch as most of these major components do not exercise operational control over field units.

Field command within the USSR is vested in the 20 military districts. Outside the USSR, for example, in Eastern Europe, military command is exercised generally through entities designated as groups of forces. The commander-in-chief of each military district or group of forces has a full staff and is in charge of all military units operating within his area, with the exception of some units, such as Long-Range Aviation. In general, these specific components at the ministry in Moscow only coordinate, advise, and assist in technical matters and do not perform command functions. The fact that the Ministry of Defense is officially a union-republic ministry in no way interferes with the direct command by the ministry in Moscow through the military districts and groups of forces. The task of the republic ministries (of defense), if such ministries do exist, would be nominal. 142/

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Military command of the waters and naval installations of the USSR is conducted through a system of geographic districts called fleets or flotillas, depending on their size. These function in the same manner as the military districts, the jurisdictions being mutually exclusive. 143/

Military districts are in turn divided into military commissariats, whose functions include maintaining plans for the local mobilization of personnel and transportation facilities, keeping records on persons subject to military service, calling up new recruits and reserves, conducting medical examinations, paying pensions, training some pre-inductees, and coordinating mobilization activities with the local civilian authorities. 144/ Even though the military commissariat is not a command function, it has sufficient duties to employ 31,000 workers, including over 12,000 officers (according to an unpublished estimate). Military commissariats seem to be present at all levels of the administrative territorial structure of the USSR.

The components of the Ministry of Defense may be divided into five general categories, based on the following primary functions*: combat, logistics, construction, personnel, and control. This categorization facilitates the explanation of the ministry's activities. These general classifications should not suggest rigidity. In some cases, a particular component performs, in one degree or another, all of the functions enumerated above. This report does not deal systematically with all these components. It emphasizes the components dealing with logistics and construction, although the predominance of the combat components cannot be overstated -- all other organizations exist for their use.

3. Combat Organizations.

The combat organizations of the Soviet Ministry of Defense reflect a strikingly similar pattern in staff and headquarters organs. Each has a staff, a rear services directorate, a political directorate, an inspectorate, a training directorate, and a PVO (Antiaircraft Defense) component. In addition, each has many subordinate components with duties peculiar to the particular combat organization.

* See Figure 2, following p. 56.

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a. Soviet Army.

The Soviet Army, aside from the staff and headquarters components mentioned above, consists of the Infantry (Ground) Artillery, Armored and Mechanized Troops, Communication Troops, Engineer Troops, Chemical Troops, Air Forces, and possibly the Cavalry. 145/ There is no evidence concerning the subordination of the other combat organizations (Air Defense of the Country, Long-Range Aviation, and the Air-Landing Troops) to the Soviet Army 146/; consequently their autonomous status is assumed, although the Air-Landing Troops may well be a part of the Soviet Army.

Each of these operational components of the Soviet Army has its own staff and numerous service directorates, and in some instances there are specialized supply organizations (for instance, the Directorate of Engineering Equipment and Supply of the Engineer Troops). 147/ The Communications Troops have a Directorate of Equipment and Supply that is responsible for the procurement and distribution of communications equipment for Soviet ground forces and, in certain cases, for the air forces. 148/ Although this function is carried out through representatives at the plants producing communications equipment, the payment is probably handled by the directorate in Moscow. 149/ The directorate also has control over the distribution of communications equipment to the military districts, where stocks of such equipment are kept on hand in the military depots. 150/ Where the situation warrants, each Soviet Army component probably contains a similar special supply organization which cooperates with the Rear of the Ministry of Defense, although it is not a part of that organization. 151/

A hierarchy of rear service organizations exists within each component of the Soviet Army. Most reports assume that they are a part of the Rear of the Ministry, but this is a limited and functional, rather than complete and exclusive, subordination.

The Air Forces of the Soviet Army is a tactical air arm containing about 60 percent of all Soviet military aircraft. 152/ The air arms outside the Soviet Army are Long-Range Aviation, Fighter

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FUNCTIONAL CLASSIFICATION OF THE OVER-ALL ORGANIZATION OF THE SOVIET MINISTRY OF DEFENSE 1955

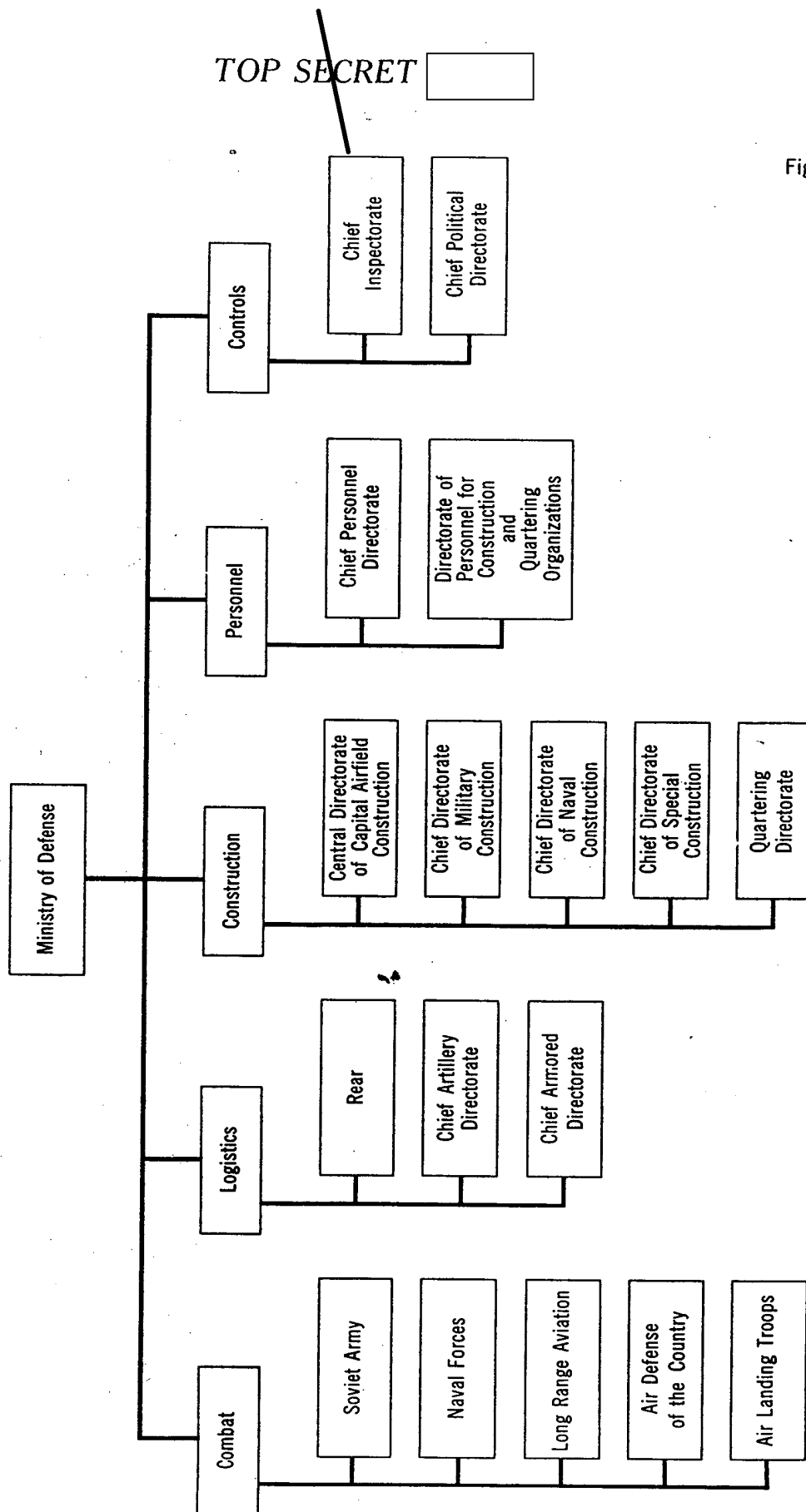


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Aviation of the Air Defense of the Country, Aviation of the Air Landing Troops, and Aviation of the Naval Forces. 153/

An indication of the duties of the Air Forces of the Soviet Army can be gathered from the designations of the operational directorates -- as, for example, ground aid to navigation, attack aviation, reconnaissance and artillery spotting, navigation, fighter aviation, bombardment aviation, transport and auxiliary, and aviation dispatcher service. 154/

As in other combat components, the Rear of the Air Forces handles only specialized supply. 155/ Relations with industry are conducted by a Directorate of Aviation Technical Service of the Rear and an autonomous Air Engineering Service. The latter is concerned with quality control, acceptances, new designs, and so on, whereas the former is interested mainly in the distribution of aircraft, spare parts, and equipment to the units. 156/

b. Soviet Naval Forces.

The most important parts of the Soviet Naval Forces, with the exception of the operational forces (including naval aviation, coastal defense, and PVO elements, among others), appear to be the Rear and other procurement organizations. In the latter category fall a series of directorates, grouped under a Deputy Supreme Commander of Naval Forces for Ship Construction and Armament. 157/ They include the Directorate of Shipbuilding, 158/ the Chief Technical Directorate, 159/ the Artillery Directorate, 160/ the Directorate of Mines and Torpedoes, 161/ and the Radar Directorate. 162/ These directorates maintain contact with the producers of ships, ordnance, and other equipment. Although details of the interrelationships are not clear, it is known that each directorate has authorized agents (military representatives) at the relevant enterprises who exercise much control, especially through their authority to accept or reject a product.

The Rear of the Naval Forces handles special supply functions, whereas the Rear of the Ministry of Defense carries out general supply of the naval forces. 163/

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c. Long-Range Aviation.

As stated previously, Long-Range Aviation -- the functional equivalent of the US Strategic Air Command -- appears to be an autonomous component of the Ministry of Defense and is independent of the military district system. Its organizational structure is probably similar to the Air Forces of the Soviet Army, 164/ but it is quite possible that Long-Range Aviation utilizes some of the organization and, undoubtedly, many of the facilities of the Air Forces of the Soviet Army. 165/ Furthermore, no procurement organizations like the Air Engineering Service and the Directorate of Aviation Technical Service have been mentioned

d. Air Defense of the Country.

Air defense elements exist in every component of the Ministry of Defense. The operations of the Air Defense of the Country (Protivovozdushnaya Oborona Strany -- PVO Strany) thus are not always organizationally unique. PVO Strany is responsible for active air defense, which includes antiaircraft artillery; fighter aviation; and air observation, warning, and communications. 166/ Air Defense of the Country has a headquarters staff for general policy-making which is serviced by a system of PVO regions which appear to operate apart from the military districts. 167/ There is some evidence, however, that the PVO districts are for information and coordination purposes and that the military districts may exercise actual command over the air defense elements. 168/ The precise nature of operational control for air defense is unknown. Although little is known about the procurement supply of items specifically designed for air defense use, existing channels are probably resorted to -- for instance, the artillery supply directorates provide weapons and ammunition; the procurement organs of the Air Forces of the Soviet Army provide aircraft; and the rear services organizations maintain a multitude of services. 169/

e. Air Landing Troops.

The function of this organization is self-explanatory, but the internal organization is obscure. These troops maintain their

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own staff and headquarters directorates, which work through the military districts. The most important activities are in all probability those dealing with personnel and the servicing and procuring of aircraft. 170/ Whether this component has its own procurement directorate is not known.

4. Logistical Organization.

Many organizations within the Ministry of Defense carry out the procurement, storage, and allocation of goods for the Soviet military establishment. Each organization maintains direct contact with the economic ministries and enterprises producing goods for military consumption. At the enterprises, military representatives of the various logistical organizations accept the finished product, arrange for shipment, and perform a multitude of miscellaneous duties. []

[]
Payment for the finished product is probably handled in Moscow. The goods usually are shipped to military depots, presumably those subordinate to the relevant logistical organization. A recent [] report lists almost 600 identified military bases and depots in the USSR. 172/

Shipment, storage, and issuance of these supplies is facilitated by subordinate logistical organizations at the military district level.

a. Rear.

The Rear of the Ministry of Defense is responsible for procuring, stockpiling, and allocating to the military establishment all general supplies and for performing many general services necessary for conducting operations. 173/ Some idea of the functions of the Rear may be obtained from a listing of some of the identified subordinate, functional organizations: the Chief Quartermaster (Intendance) Directorate, the Military Medical Directorate, the Automotive Directorate, the Directorate of Fuel Supply, the Veterinary Directorate, the Management Directorate, and the Finance Directorate. 174/ []

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Contrary to general opinion, the Chief Directorate of Military Trade (Glavvoyentorg) has been a part of the Ministry of Trade, at least since 1940. 177/ This organization provides military personnel -- for a price -- with restaurant, barber, tailoring, and other services beyond the minimum furnished by the Ministry of Defense. 178/

A further breakdown of the Chief Quartermaster Directorate reflects two very important organs: the Directorate of Food Supplies and the Directorate of Clothing and Equipment Supplies. 179/

Where necessary, each of these directorates of the Rear appears to have an account number in the Budget Section of Gosbank, through which funds are allocated for designated purposes. 180/ The Finance Directorate of the Rear apparently supervises, coordinates, and has ultimate responsibility for the financial activities of these and other organizations of the Rear. 181/

The Financial Department of the Management Directorate of the Rear finances all Ministry of Defense military representatives at the various economic enterprises. Financing extends to salaries, travel allowances, per diem payments, clerical expenses, and so on, but it does not include purchases of end products. 182/

Since the financial accounting of the Ministry of Defense must be centralized at some point, the Finance Directorate of the Rear is the logical organization to perform such a task. [] many components outside the Rear resort to the Finance Directorate for advice and instructions. 183/ In fact, [] reflect the interest of the directorate in financing military construction by organizations outside the Ministry of Defense. 184/

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The hierarchy of finance organizations culminating in the Finance Directorate of the Rear also processes the periodic requisitions of funds and credits by the military units and arranges that such funds and credits are put at the disposal of the military units. 185/

Each chief directorate and directorate of the Rear has its own system of depots and bases. 186/ [] [] that the military establishment, in some instances, may utilize bases of the Central Union of Consumer's Societies for storage and/or distribution. 187/

b. Chief Artillery Directorate.

Besides the Rear, the Ministry of Defense contains two other autonomous logistical organizations, the Chief Artillery Directorate and the Chief Armored Directorate. The former is responsible for "stocking items of artillery supply, that is, ammunition, field pieces, machine guns, optics, and so on; stockpiling reserves of artillery supply; and distribution of items of artillery supply to military units through its bases and depots." 188/ Care should be taken not to confuse this organization with the Artillery of the Soviet Army. The important directorates of the Chief Artillery Directorate appear to be the [] Directorate, [] [] probably concerned with construction of storage bases), the Directorate of Repair and Supply of Artillery Forces 191/ (probably oversees or coordinates work done for the Artillery of the Soviet Army), and the [] Directorate. [] As the title indicates, the last named organization has an important function. Whether it is concerned with operational planning in addition to financial planning is not readily discerned, but the latter function seems more likely. 193/ Payments for production apparently are handled in Moscow, 194/ presumably through, or with the knowledge of, the Finance Directorate of the Rear.

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c. Chief Armored Directorate.

[] a third autonomous logistical organization -- the Chief Armored Directorate -- is responsible "for the supply and distribution of armored vehicles and related equipment to the armed forces." 195/ This directorate should not be confused with the Armored and Mechanized Troops of the Soviet Army. Although the organizational structure and the duties are not spelled out, one activity of the Chief Armored Directorate is to supervise the repair of armored vehicles at its own military bases. Procurement of necessary spare parts accompanies this responsibility. 196/ [] suggest that this organization might procure armored vehicles and related equipment. 197/

d. Other Logistical Organizations.

Besides the logistical organizations attached directly to the Ministry of Defense, others are located within each combat component. Rear organizations of each component handle procurement, storage, and allocation peculiar to the particular arm, whereas special supply directorates handle special equipment. 198/ All these organs presumably work with their own finance departments; the Finance Directorate of the Rear assuming the role of coordinator and general supervisor. 199/

5. Construction.

a. Directorate of Military Construction.

The Directorate of Military Construction was created in early 1947 and took over the construction functions of the dissolved Chief Directorate of Construction and Quartering of the Rear, as well as some of the activities of the Ministry of the Construction of Military and Naval Enterprises. 200/ []

[] operate as a complex []

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Construction under its jurisdiction would include quarters, shelters for equipment, and storage depots. Supplementary information shows that this directorate was concerned in some degree with the construction of a school for the Ministry of Education 202/; refrigerator plants for the meat industry 203/; a stadium for the city of Voroshilov 204/; and, possibly, a civil air construction project. 206/ The Prombank (Industrial Bank) plays a major part in the handling of finances for this construction. 207/

b. Chief Naval Construction Directorate.

The Chief Naval Construction Directorate came into existence in 1948 and, along with the Chief Military Construction Directorate, took over some of the functions of the Ministry of the Construction of Military and Naval Enterprises. 208/ This directorate has handled a variety of construction activities, including coastal defense works, harbor installations, defense batteries, naval barracks and arsenals, a power station, a cement factory, and construction for a military trade outlet. 209/ Responsibility for coordinating all naval construction activity appears to reside in the Chief Naval Construction Directorate. 210/

c. Central Directorate of Capital Airfield Construction.

The Central Directorate of Capital Airfield Construction (known as TsUKAS) at the present time is apparently an autonomous organization of the Ministry of Defense. 211/ There is a suggestion, that before 1946 the Ministry of Internal Affairs contained Chief Directorates of Airdome Construction and Defense Construction (which were transferred out of the ministry after World War II). 212/

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It is believed that the subordinate organizations of TsUKAS "are an integral part of all the fleets and military districts, receiving their direction, technical control, and finance from the Central Directorate -- but operationally subordinate" to the commander of the military district or fleet. 214/ Financing of construction is carried out through the Prombank. 215/

A relationship with the Chief Directorate of Highways of the MVD might still exist. Co-location of construction units of the separate organizations is commonplace, and there have been transfers between them of road-building organizations or equipment for airfield construction units. 216/

d. Chief Directorate of Special Construction.

The Chief Directorate of Special Construction was created in April 1951 from the Directorate of Defense Construction of the Soviet Army and subordinated directly to the Military Ministry. 217/ The change of name suggests that the construction activity is of an unusual or sensitive type, []

[] airfield construction, 220/ communica-
tion construction, 221/ and the Chief Directorate of the Northern
Sea Route. 222/

Although at one time the Chief Directorate of Special Construction and its predecessor may have directed and coordinated certain construction independently of the military districts, it is now believed that the regular military district system is utilized. There is no reason to surmise that financing is carried out in any extraordinary manner.

e. Quartering Directorate.

[]
[]
[] It
is probable that the Quartering Directorate is now an independent
organization of the Ministry of Defense 224/ and has responsibility

[] Activities

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include the provision of firewood, water supply and firefighting equipment, the estimation of necessary living space, and the coordination and checking of barracks construction. 226/

[]
It is known that the Directorate of Special Construction of the Chief Directorate of the Northern Sea Route has done work for the Quartering Directorate. 228/ [] the completion of "heated and refrigerated warehouses." 229/

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APPENDIX B

ALTERNATIVE INDEX FOR MILITARY PERSONNEL COSTS

[] data on personnel costs for the years 1950-54 for selected areas of the USSR. These data represent about one-fifth to one-sixth of total personnel costs as estimated in the text (under II, A, 1). An index based on these data and applied to total estimated expenditures for personnel in 1951 gives an alternative series of personnel costs, as shown in Table 16.

Table 16

Comparison of Estimates of Personnel Costs
of the Soviet Armed Forces a/
1950-54

<u>Billion Current Rubles</u>			
<u>Year</u>	<u>Personnel Costs</u>	<u>Personnel Costs from Table 5 <u>b/</u></u>	<u>Total Defense</u>
1950	29.0	32.9	82.8
1951	31.2 <u>c/</u>	31.2 <u>c/</u>	93.9
1952	37.0	31.4	108.6
1953	30.0	31.3	105.0
1954	23.0	30.6	(100.0) <u>d/</u>
Average	30.0	31.5	

a. Based on data in Tables 7, p. 38, above, and in Tables 17 and 18, pp. 70 and 71, respectively, below.

b. P. 34, above.

c. Data are from Table 5. This is the base year for all other years of column one.

d. Parentheses indicate an estimate based on the plan figure.

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The averages of personnel costs by the two methods for 1950-54 do not differ significantly. For 1952 and 1954 the differences would be too great to be disregarded if the [] sample were judged to be representative. The area of coverage is such, however, that a re-deployment of troops could bring about such a discrepancy. The index [] probably, therefore, exaggerates year-to-year movements. It is, however, more sensitive to annual fluctuations in aggregate Soviet military personnel expenditures than the other procedure and may be used to indicate year-to-year trends and to set extreme limits.

It is interesting that the [] index varies in trend with total defense expenditures for those years. Total defense expenditures include personnel costs, procurement, and maintenance and operations costs. The category most subject to short-term change is personnel costs because increasing costs of end items and relatively long-term planning schedules should provide relative stable expenditures for end items and maintenance. The numerical strength of the armed forces is perhaps more responsive to current defense policy.

The implied numerical strength of the Soviet Armed Forces from the [] index for 1950-54 is as follows:

<u>Year</u>	<u>Number of Personnel (Thousands)</u>
1950	3,600
1951	4,100
1952	5,100
1953	4,300
1954	3,300

[]
[] These reports give cumulative totals of budget expenditures and income for

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areas served by the reporting bank. Pertinent data concern Union budget expenditures, since the entire defense budget is part of the Union budget. There are three types of such budget reports: (1) one gives total expenditures of the Union budget since 1 January; (2) another gives "non-strategic" expenditures of the Union budget; (3) a third gives "strategic" expenditures of the Union budget. These latter include defense and internal security personnel costs, MVD construction activity, atomic energy, and state reserves purchasing. The third report but by subtracting the sum given in the non-strategic report from the sum given in the total expenditures report, the sum of strategic expenditures can be derived. In the past, defense personnel and internal security personnel have accounted for about 80 percent of strategic expenditures, and an index of strategic expenditures thus should correspond to an index of defense personnel and internal security personnel costs as a portion of strategic expenditures. This is shown in Table 17.*

The area of coverage used for the index is the Soviet Far East -- Primorskiy Kray, Khabarovskiy Kray, Magadan Oblast, Amur Oblast, and Irkutsk Oblast. Table 18** gives total strategic expenditures in these areas in 1950-54.

The alternative figures for Magadan and Khabarovsk may be preferred because they do not include allocations for economic activities of the MVD, which received in 1954 a separate allocation of 1 billion rubles for settling debts. The inclusion of this allocation in strategic expenditures would detract in years of such fluctuations from the reliability of the index for military personnel costs.

Eighty percent of strategic expenditures in the areas in Table 18 is about one-fifth to one-sixth of total estimated personnel costs. The number of military units in these areas corresponding to the reported strategic expenditures includes about one-sixth of all military units

* Table 17 follows on p. 70.

** Table 18 follows on p. 71.

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Table 17

Personnel Costs of the Soviet Armed Forces
in Selected Areas as a Share of Strategic Expenditures a/

Area	Total Strategic Expenditures (Million Current Rubles)	Military Personnel Costs (Million Current Rubles)	Percent of Total
Amur Oblast <u>b/</u>	608.8	528.1	86.7
Primorskiy Kray <u>c/</u>	924.9	837.7	90.6
Irkutsk Oblast <u>d/</u>	957.3	642.8	67.1
Azerbaydzhan SSR <u>e/</u>	1,028.8	706.8	68.7
Khabarovskiy Kray <u>f/</u>	3,302.7	2,653.7	80.3
Total	<u>6,822.5</u>	<u>5,369.2</u>	<u>78.7</u>

a. 230/

b. 1 January to 1 September 1950.

c. 1 January to 1 May 1951.

d. 1 January to 1 October 1950 and 1 January to 1 May 1951.

e. 1 January to 1 November 1949.

f. 1 January to 1 April 1950 and 1 January to 31 December 1953.

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Table 18

Strategic Expenditures for Selected Areas of the Soviet Far East a/
1950-54

Million Current Rubles

Year	Khabarovskiy Kray and Magadan Oblast	Primorskiy Kray	Irkutsk Oblast	Amur Oblast	Total	Index (1951 = 100)
1950	(2,600) <u>b/</u>	2,439	873	779	6,691	94
1951	2,914	2,473	(880) <u>b/</u>	(800) <u>b/</u>	7,067	100
1952	3,167	2,785	1,666	857	8,475	120
1953	2,475 <u>c/</u>	2,941	1,068	612	7,096 <u>c/</u>	100 <u>c/</u>
1954	2,078	3,082	678	322	6,160 <u>c/</u>	87 <u>c/</u>

a. 231/

b. Parentheses indicate estimates.

c. Figures which do not include MVD economic activity for Khabarovsk and Magadan for 1953 and 1954 are as follows: 1953, 2,286 million rubles, which makes the total 6,907 million rubles and the index 97; and 1954, 1,052 million rubles, which makes the total 5,134 million rubles and the index 73.

estimated to be these areas. For example, the army has an estimated 25 out of 180 line divisions in the East Siberian and Far Eastern Military Districts and 5 out of 40 antiaircraft artillery divisions. 232/ The navy has about 170,000 out of a total 780,000 personnel in the Pacific and Amur flotillas. 233/

One important qualification should be noted in connection with the derived index. The area may have been unusually sensitive in the past 5 years to changes in personnel strength as a result of the Korean War and other Far Eastern developments.

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APPENDIX C

SOVIET DEFENSE EXPENDITURES AS A CATEGORY OF THE STATE BUDGET

In all prewar and postwar budgets there is an item of expenditure designated "defense," which refers to the Ministry of Defense or its predecessors, depending on its particular organizational status. Expenditures for defense have been defined in Soviet literature to include "expenditures for maintenance of the armed forces of the USSR," 234/ or "expenditures according to the estimate of the Ministry of Armed Force." 235/

Items traditionally outside the explicit appropriation for defense include some research and development and militarized security troops. The excluded research and development probably are financed in the budget category Social-Cultural Measures, under Science. Expenditures on militarized security troops are included in the budget category Internal Security, which covers the maintenance of the Ministries of Internal Affairs and State Security.* There is no evidence at this time that any other budget category includes defense expenditures.** There has been evidence in postwar budgets that the budget category for atomic energy (included in expenditures for national security but excluded from defense, as defined) had shifted from the undisclosed budget residual to Financing the National Economy. It may be assumed that this transfer was on the basis of increasing integration with the rest of the national economy. 236/ A further indication of this integration is the possible shift in 1955 of atomic energy expenditures from the residual in Financing the National Economy to Heavy Industry.

1. Explicit and Hidden Defense Expenditures.

State subsidies to defense industries existed in 1935-37, during the war years, and presumably up to and including 1948. It is stated

* Since April 1954 this organization has been called the Committee for State Security.

** Investment in defense plants is not considered a defense expenditure although it does have ultimate defense relevance.

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that they have been used since 1948 only in the initial stages of production. 237/ In both 1937 and 1949 an attempt was made to abolish state subsidies by increasing wholesale prices. In both these years it was announced that the main cause for increases in explicit defense expenditures was the increase in prices. 238/ In view of this acknowledgement, it may be assumed that subsidies for defense industries were curtailed in 1948. (In 1949, a 32-billion-ruble decrease was planned in noninvestment budget allocations to industry. It might be estimated, therefore, that in 1948 subsidies to all industry were somewhere near this amount. At present some subsidies may exist for new production, but they probably do not exceed 3 billion to 4 billion rubles for all of industry, including defense industries.)

Up until the end of 1950, atomic energy expenditures were in the undisclosed general budget residual. Beginning in 1951, they were transferred to the residual within Financing the National Economy. 239/ It may be assumed that the cost of research and development involving nuclear energy weapons has been borne by those categories in which atomic energy allocations have been observed. In 1955, operating expenditures for atomic energy may have been transferred into the category Heavy Industry under Financing the National Economy, possibly under the Ministry of Machine Building.

In 1950 the undisclosed residual of the budget was 13.8 billion rubles; in 1952, after the transfer of atomic expenditures to Financing the National Economy, it had declined to 4.2 billion rubles.* In 1950 the residual category within Financing the National Economy was planned at 12.6 billion rubles, and in 1952 it had increased to 32.5 billion rubles. From this shift a range of expenditures to atomic energy might be derived - that is, 9.6 billion to 19.9 billion rubles in 1951-52.** In 1955, the residual within Financing the National

* See Table 19, p. 76, below.

** These figures should be treated with proper restraint. The relative value of the ruble for the atomic energy program is not known.

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Economy decreased by 18.3 billion rubles, and the item Heavy Industry within the category Financing the National Economy increased by 21.5 billion rubles. There is as yet no supporting evidence similar to that which substantiated the 1950-51 shift -- that any categories have shifted in 1955.

There have been some suggestions that from 1953 to 1955 the large unexplained increases in the budget cover hidden military expenditures -- in particular, expenditures for new weapons development. These large increases can be explained by the introduction of new, fictitious entries on both sides of the budget which reflected budget losses resulting from retail price cuts and rising agricultural procurement prices. These measures were taken at the expense of turnover tax receipts which show a decline in 1953 to 1955. The fictitious entries in the budget are the value of lost turnover tax receipts and merely indicate that the budgets of those years would have been such a size had retail price cuts and procurement price increases not taken place. In effect, these fictitious entries merely enlarge the size of the budgets of 1953 to 1955. In 1955 there have been no retail price cuts, and the amount of fictitious entries is less than in 1953 and 1954. It amounts only to the value of losses due to increased agricultural procurement prices.*

There seems to be little doubt that there are entries on both sides of the budget which represent tax reductions resulting from price cuts and from increases in state agricultural procurement and purchase prices. In order to obtain comparable budget figures for the years before and after 1953, therefore, the fictitious entries have been separately listed in all post-1953 budgets shown in Table 19,** and only actual revenues and expenditures have been compared.

* For a discussion of fictitious entries, see source 240/.

** Table 19 follows on p. 76.

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Table 19

Categories for Soviet Hidden Defense Expenditures
(Plan Figures)
Selected Years, 1937-55

	Billion Current Rubles							
	<u>1937 a/</u>	<u>1941 b/</u>	<u>1944 b/</u>	<u>1948 b/</u>	<u>1950 b/</u>	<u>1952 c/</u>	<u>1954 d/</u>	<u>1955 d/</u>
Budget residual e/	9.1	16.7	18.3	43.1	49.5	43.5	45.3 f/	47.0 g/
Internal security	2.7	7.3	(6.8) h/	(25.2) h/	(21.1) h/	(22.9) h/	N. A.	N. A.
Reserve fund,								
Council of Ministers	1.9	5.2	7.0	5.2	6.1	6.1	N. A.	N. A.
State loan expenditures	2.6	3.4	2.9	3.5	5.5	8.9	10.5	12.2
Increasing resources								
of special banks	1.4	0	0	2.6	3.0	1.4	N. A.	N. A.
Undisclosed	0.5	0.8	1.6	6.6	13.8	4.2	N. A.	N. A.
Residual within								
Financing the National Economy	6.2	8.1	3.6	(12.1) h/	(12.6) h/	(32.5) h/	(31.0) h/	(12.7) h/

a. 241/

b. 242/

c. 243/

d. 244/

e. Total expenditures minus Financing the National Economy, Social-Cultural Measures, Defense, and Administration.

f. Excludes fictitious entries as follows: retail price reductions, 15.7 billion rubles; inventory revaluation, 6.5 billion rubles; procurement price increase, 23.3 billion rubles; total, 45.5 billion rubles.

g. Excludes fictitious entry of 22.5 billion rubles for procurement price increase.

h. Parentheses indicate estimates.

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2. Residual Budget Categories.

A budget residual can thus be defined as the difference between total expenditures and the sum of known expenditures. Two residual categories are pertinent to this report, one an over-all budget residual and the other a residual within Financing the National Economy. Information on the components of the general budget residual was published before 1950; for the years 1950 and 1952, information was provided by a foreign reporter present at the meetings of the Supreme Soviet, who took notes on the meetings. Components of the general budget residual have been traditionally: Internal Security, MVD and MGB; Reserve Funds, Soviets of Ministers of the Union and Union Republics; Allotments to Special Banks, for expansion of credit resources; and Returned Revenues and Other Expenditures.

[] the last item, Other Expenditures, to have been used for allocations for atomic energy (before 1951) and for the Red Cross. 245/ It also covers other minor items. [] that Returned Revenues is the item under which fictitious entries are being made. 246/ In short, retail price cuts and increased agricultural procurement prices are, in effect, a return of turnover tax revenues to the population, but since the announced plan for turnover tax receipts takes these measures into account, the supplementary items are fictitious.

The residual category within Financing the National Economy is [] to have included appropriations to the atomic energy program since 1951. In the 1941 budget this category was broken down as follows 247/:

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	<u>Billion Current Rubles</u>
State Reserves	3.5
Chief Directorate of Hydro- meteorology	0.2
Chief Directorate of Auto Transport	0.1
People's Commissariat of Finance, Chief Directorate of Precious Metals	2.0
Chief Directorate of Geodasy and Cartography	0.2
Chief Resettlement Directorate	0.3
Undisclosed	1.8
Total	<u>8.1</u>

In recent years, [] this category also in-
cludes 248/:

- MVD Prison labor camps (after 15 March 1955)
- Chief Directorate of Hunting (before 15 March 1953)
- Atomic energy program (after 1 January 1951)
- Chief Directorate of Organized Recruitment of Manpower
(before 15 March 1953)
- Chief Directorate of Hydrolysis and Alcohol Sulphite
(before 29 July 1948)

All the items listed in 1941 also appear []
on this category. In 1951, when the category increased by 18 billion
rubles, some atomic energy activities were known to have been
moved into it. There is no postwar information on ruble allocations
to any of the other components of this category.

In conclusion, [] show that the only place
that hidden expenditures for national security occur in present budgets
is in the residual category Financing the National Economy. In 1951-
52 this may have amounted to between 9.6 and 19.9 billion rubles,

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but these expenditures were for atomic energy and are not defined as defense expenditures. If there are any defense expenditures in the general budget residual of the entire budget, they are quite small. In 1952 the unidentified components of the residual of the entire state budget were about 4 billion rubles. They probably have not varied much since.

3. Soviet Defense Budgets of 1937, 1941, 1944, 1948, 1952, 1954, and 1955.

A review of budgetary practices in selected years illustrates earlier Soviet principles for handling defense appropriations, as shown in Table 20.*

a. 1937.

Planned defense appropriations in 1937 were 20.1 billion rubles, as against actual expenditures in 1936 of 14.2 billion rubles, an increase of 35 percent. Defense industries were to receive 2.3 billion of the 12.4 billion rubles planned allotments to industry. The following reasons for the large increase in this category were given by Finance Minister Grin'ko 249:

- (1) An increase in strength (numbers) of the Red Army.
- (2) An increase in cost of military end items owing to technological advances.
- (3) The development of reserves for all types of goods, which involves payment both for the reserves themselves and for construction of warehouses and administration of storage.
- (4) The further construction and repair of barracks, and of housing for commanders of the Red Army, and the further development of political-educational measures in the Red Army.

* Table 20 follows on p. 80.

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Soviet State Budgets a/
Selected Years, 1937-55

Billion Current Rubles

	1937 <u>b/</u>	1941 <u>c/</u>	1944 <u>d/</u>	1948 <u>e/</u>	1952 <u>f/</u>	1954 <u>g/</u>	1955 <u>h/</u>
Revenue	109.3	216.2	268.0	410.5	497.7	527.0	567.7
Turnover tax	75.9	124.5	94.9	247.3	246.9	234.4	233.7
Profits tax	6.5	31.3	21.4	27.2	58.5	92.8	117.5
Population taxes	2.6 <u>i/</u>	12.5	37.2	33.1	47.4	45.7	48.4
State borrowing	6.0 <u>i/</u>	13.2	32.6	23.9	42.6	(27.4)	(42.5)
Other	18.3 <u>i/</u>	34.7	81.9	79.0	102.3	126.7	125.6
Expenditures	106.2	215.4	264.0	370.9	460.2	517.3	541.0
Financing the National Economy	43.2	72.9	53.7	149.6	178.8	216.4	222.4
Social-cultural measures	30.9	47.8	51.3	105.7	122.8	141.4	146.9
Defense	17.5	70.9	137.8	66.3	108.6	100.3	112.1
Internal security	3.0	7.3	(6.8) <u>j/</u>	(25.2) <u>j/</u>	(22.9) <u>j/</u>	N.A.	N.A.
Administration	4.4	7.1	7.3	13.1	14.3	13.9	12.6
Other <u>k/</u>	7.0	9.4	7.1	11.0	12.8	45.3	47.0
Capital investment	29.5	57.0	29.0	66.2	143.1 <u>i/</u>	169.0	167.2

a. All figures are actual, except where noted.

b. 250/

c. Plan figures. 251/

d. 252/

e. 253/

f. 254/

g. Plan figures. 255/

h. Plan figures. 256/

i. Plan figure..

j. Parentheses indicate estimates.

k. In budget plans, reserve funds are entered; they usually are not in actual budgets.

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- (5) The removal of all privilege prices on supplies to the army, including such large items as motor gasoline and other types of oil fuel, coal, firewood, and repair materials.
- (6) The removal of all privilege rates on rail and water transport.

The increases resulted from the liquidation of rationing in the distribution of goods and from the establishment of unit prices for all national economic turnover in the country.

These items listed under the explicit defense appropriation indicate that beginning in 1937 the Ministry of Defense ceased to receive preferential treatment as regards prices on maintenance and operations supplies and perhaps other supplies and equipment. This arrangement remained in effect for all industry until the war, when budget subsidies to the defense industries were again applied.

The defense budget was underfulfilled by 13 percent in 1937. Actual expenditures were 17.5 billion rubles. ^{257/} Except for expenditures of 3.0 billion rubles to Internal Security, there was no evidence of hidden defense expenditures in the budget. Undisclosed residuals in Financing the National Economy were planned at 6.2 billion rubles, and in the total budget at 0.5 billion rubles.* Although the former category contains outlays for reserves, military reserves are not financed there; they are included in the explicit defense budget.

b. 1941 (Plan).

In the 1941 budget plan, explicit defense appropriations were 33 percent of total expenditures, or about 71 billion rubles, of which 58 billion were for the army and 13 billion for the navy.

* In local expenditures, which do not have defense significance, these amounts are 3.9 billion and 0.3 billion rubles, respectively.

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Increased emphasis on defense is evident both from increased appropriations to the explicit defense category and increased appropriations to defense-producing industries for investment. Internal security was to receive 7.3 billion rubles in 1941.

Zverev, the Finance Minister, stated that in order to cover the expenditures on defense, the income tax on kolkhozes and the agricultural income tax on kolkhozniks and individual peasants had been raised. 258/ Obviously the 1941 budget was geared much more toward defense production than was the 1937 budget. Budget allocations for capital investment were to amount to 47 billion rubles. Of this, 27.5 billion rubles were allocated to Industry, which includes certain defense activities, broken down as follows: aviation, 3.9 billion rubles; ship-building, 1 billion rubles; ammunition, 1.7 billion rubles; armaments, 1 billion rubles; and Chief Directorate of Military Construction, 0.1 billion rubles. This excludes investments by the Ministries of Defense and Navy, estimated by Kaplan to be 3.35 billion rubles. 259/

In 1941 the budget indicated that explicit defense appropriations covered all expenditures to be made by the Ministry of Defense. In presentations of the Union budget, which is contrasted to the state budget in that it excludes allocations for the republics, expenditures are listed according to organization. There is no functional breakdown as there is in the state budget presentation, as for example, Social-Cultural Measures and Administration. Each ministry or chief directorate is listed with all funds receivable from the Union budget, regardless of the designation of those funds. Since it is known that the Ministry of Defense at that time received all of its funds from the Union budget and none from republic budgets and since the defense budget was the same when listed in both the Union and state budget presentations, it may be assumed that the Ministry of Defense received no additional funds from other budget categories.

There may be an expenditure for scientific research with defense applications outside the defense appropriation. Such research expenditure, or a good portion of it, would be considered applicable to the budget of the ministry which would apply the findings of the research to its own activity -- for example, new fighter aircraft design would be put into use by the Ministry of Aviation.

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The list of items included in the defense appropriation in 1936 and the indications in 1941 that all expenditures of the Ministry of Defense are paid out of the Defense budget show that in prewar budgets, at least, the category defense was a pure one and that there were no allocations to the Ministry of Defense from other budget categories.

c. 1944.

In 1944, defense appropriations were the highest in Soviet history -- 137.8 billion rubles, or about 52 percent of total budget expenditures. Financing the National Economy and Social-Cultural Measures amounted to about 40 percent of total expenditures.

Turnover tax receipts amounted to about 35 percent of budget revenue. This reduction of turnover tax receipts during the war reflected the change from consumer goods production to military production. 260/ In order to supplement revenue for financing war industries, money was collected from the population in the form of voluntary contributions, war loan subscriptions, money lotteries, and a special war tax on the income of all citizens with the exception of servicemen and their families. 261/ Receipts from subscription to the war loan in 1944 amounted to 29 billion rubles; from the war tax, 21 billion rubles; from voluntary contributions, 5 billion rubles 262/; and from lotteries (plan), 5 billion rubles. In all, receipts from these sources accounted for 22 percent of total revenue. Besides these, deposits of gold and platinum and savings deposits amounted to 3.6 billion rubles. 263/ In 1942 and 1943, current budget expenditures exceeded current revenues, and the deficit was covered by "the printing of money and mobilization, through the credit system, of material reserves and supplies formed in the national economy of the USSR before the war." 264/ An item of revenue that increased considerably during the war years and decreased immediately afterward was receipts from customs. This was probably related to the lend-lease program. In 1945, customs receipts were planned to be 27 billion rubles 265/; in 1946, they were planned to be 7 billion rubles. 266/

Expenditures for the internal security troops in 1944 were 6.8 billion rubles, which was lower than planned appropriations in

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1941. This can be explained by the fact that many internal security functions were taken over by the armed services during the war.

In 1944 there was no evidence of any hidden defense expenditures. Unexplained expenditures from the Union and republic budgets -- that is, exclusive of local budgets -- were planned at 0.8 billion rubles, and within the category Financing the National Economy, the residual was 3.6 billion rubles from all budgets (including local budgets). This amount was to cover allocations to state reserves, gold purchases, and a number of other small organizations.

d. 1948.

In 1948, explicit defense expenditures had fallen to about 18 percent of total expenditures. On the other hand, internal security was to receive 25 billion rubles, as against 7 billion in 1944. In 1948 the explicit defense budget may have included more items than in 1947 (or prices may have increased), because expenditures in 1948 were planned at 66.1 billion rubles, as against 66.4 billion spent in 1947, and at the same time Sverev stated that "if one takes comparable data, then expenditures for the armed forces in 1948 will decline by 2.5 billion rubles in comparison with 1947." 267/ This may have been partly related to the reorganization of military construction activities. Also, the functions of internal security were increasing as the armed services were being cut.

In 1948 a program of increasing prices in industry and transport was begun in order to abolish subsidies in these sectors. During the war, subsidies to these two sectors had increased because prices on industrial products were maintained at the pre-war level and costs of production were pressing upward. 268/ Undisclosed expenditures from the Union and republic budgets, exclusive of local budgets, were 5.7 billion rubles, and has indicated that they contained some strategic expenditures for atomic energy development. 269/ Within Financing the National Economy unexplained expenditures from the state budget were planned

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at 6.6 billion rubles. Actual expenditures were 9.2 billion rubles. State reserves, gold purchasing, and other activities probably were increasing in these years. These in addition to atomic energy developments would tend to explain this increase.

e. 1952.

Expenditures for defense in 1952 increased to about 24 percent of total budget expenditures. This proportion is comparable with defense expenditures in 1939 (27 percent) and in 1946 (24 percent). The reason for increased defense expenditures after 1948 is stated to have been the "necessity for strengthening the defensibility of the USSR under threat of a new war." 270/

In 1952, allocations to internal security were about 22.9 billion rubles, slightly less than in 1948. The undisclosed part of Financing the National Economy in 1952 was planned to be about 33 billion rubles, as against 9.2 billion in 1948. In 1952, undisclosed appropriations from the Union and republic budgets were 3.7 billion rubles, as against 13.2 billion in 1950, before the shift of categories. It would be difficult to imagine that there is any significant appropriation of strategic import in the budget residual of 1952.

Of the 179 billion rubles for Financing the National Economy, about 80 billion went to industry and 14 billion to transport. This was a significant reduction in expenditures in both sectors, resulting from the abolition of subsidies in 1949 and 1950 and subsequent price reductions. At present, subsidies are used only in initial stages of plant operation on new products.

f. 1954.

In 1954, explicit defense expenditures amounted to about 19 percent of total expenditures, which represents both an absolute and a relative decline as compared with 1952.* Within the category

* All budget figures, total and residual, refer only to the adjusted expenditures and revenues. See discussion of fictitious entries, p. 75, above.

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Financing the National Economy, the residual category was about the same if not less than in 1952. It rose in 1953 and decreased in 1954 back to the 1952 level. The post-1952 category may not be strictly comparable with the pre-1952 category, however, since beginning in 1953 the subcategories of Financing the National Economy were presented in a slightly different manner. At any rate, expenditures for new weapons development in this category are estimated not to have increased significantly from 1951 to 1954, although it is impossible to break down the category further.

g. 1955.

In 1955, defense appropriations are about 21 percent of total appropriations, the same share as planned in 1951, but a 2-percent increase as compared with 1954. The increase is probably the result of an increase in the value of defense procurement, much of which is related to advances in weapons design. The budget residual is of the same magnitude as in 1954 (Plan). Therefore, it is probable that no significant change has been introduced in any of the components of the residual. Allocations to the residual within Financing the National Economy will decrease by an estimated 18 billion rubles, but there is an implied transfer of categories from the residual to Heavy Industry. Of the components in the residual, it seems that the one most likely to shift is atomic energy. The creation in 1953 of the Ministry of Medium Machine Building with its connections with atomic energy may have heralded such a shift and may have been an indication of further integration of atomic energy activities into the economy. It is unlikely that such items as state reserves or Ministry of Finance, Chief Directorate of Precious Metals, would be shifted, for they have been located in the residual since before the war.

Allocations to internal security in 1955 are unknown, although the residual within which this item is located has not increased relative to 1954. Internal security allocations have in the past accounted for about two-thirds of the residual appropriation, and this proportion is assumed to apply in 1955.

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In summary, the 1955 budget indicates that there has been an increase in explicit defense expenditures of about 12 percent relative to planned expenditures in 1954. There are no signs of hidden defense expenditures, but atomic energy allocations may have been changed from one category to another.

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APPENDIX D,

GAPS IN INTELLIGENCE

The most serious gap in intelligence relevant to the determination of a series of Soviet expenditures on military end items in constant prices is a price index. Price indexes for selected classes of industrial equipment would be appropriate for military end items, if adjustment were made for scale of effort.

A gap in the distribution of total defense outlays among its major classes concerns expenditures for maintenance and operations. ☐

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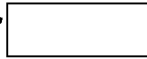
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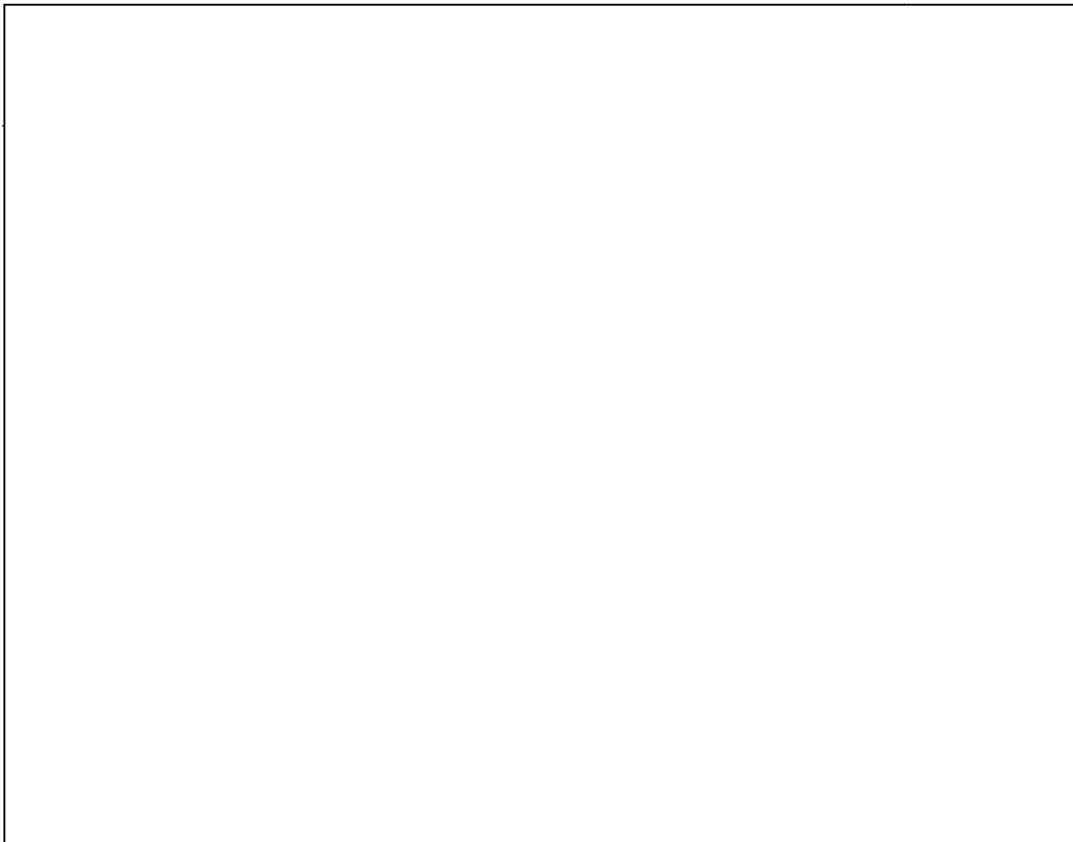
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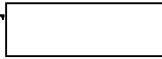
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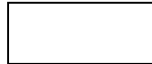
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